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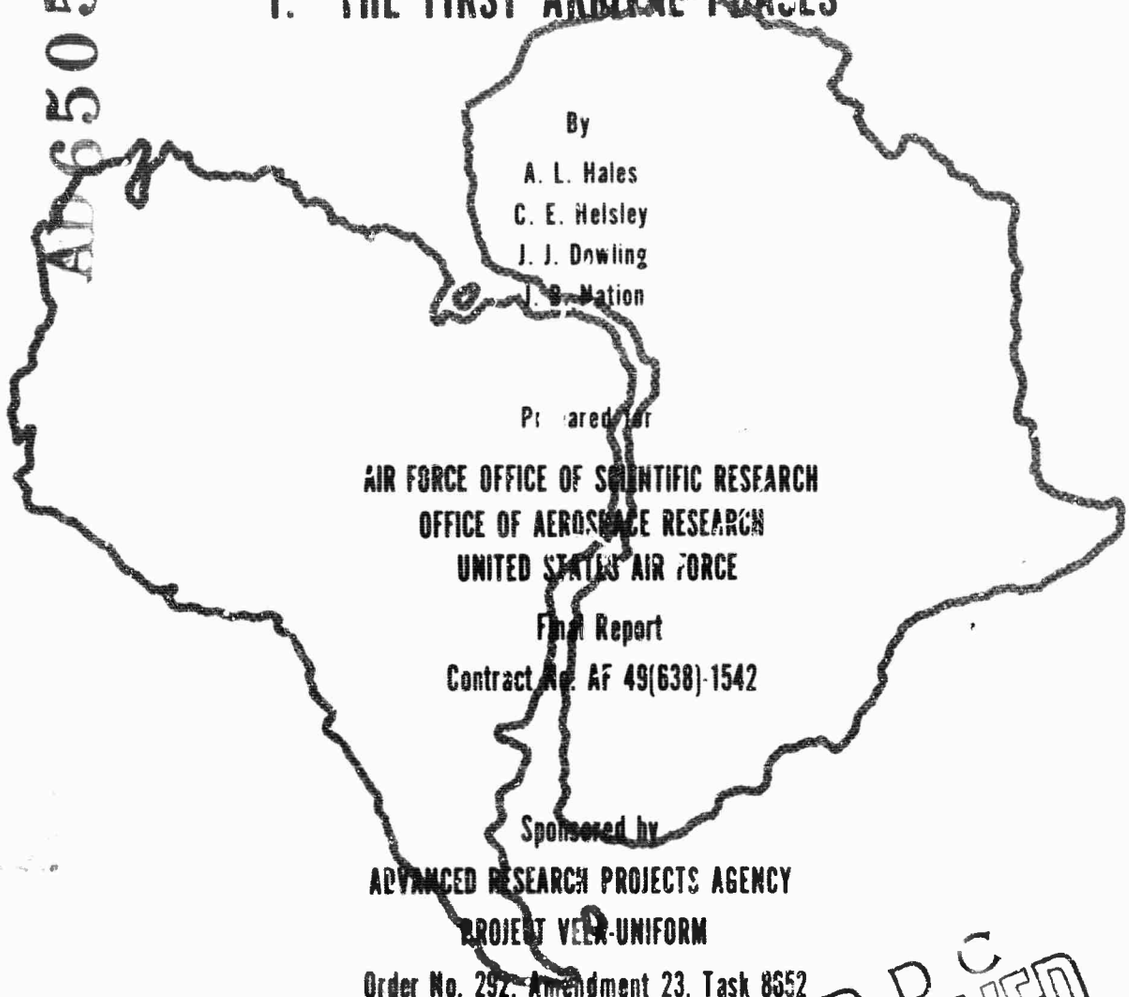
THE EAST COAST ONSHORE OFFSHORE EXPERIMENT
1. THE FIRST ARRIVAL PHASES



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Prepared for

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH
OFFICE OF AEROSPACE RESEARCH
UNITED STATES AIR FORCE

Final Report

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THE EAST COAST ONSHORE OFFSHORE EXPERIMENT

I. THE FIRST ARRIVAL PHASES

Final Report for Project:

"A Cooperative Onshore Offshore Seismic Experiment"

Prepared for

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH
OFFICE OF AEROSPACE RESEARCH
UNITED STATES AIR FORCE

Contract AF 49(638)-1542, Program Code 5810
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Contribution 50 of the Geosciences Division
Southwest Center for Advanced Studies, Dallas, Texas

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THE EAST COAST ONSHORE OFFSHORE EXPERIMENT

I. The first arrival phases

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Contribution 50 of the Geosciences Division, Southwest Center for Advanced Studies, Dallas, Texas

ABSTRACT

A cooperative seismic crustal structure experiment involving eleven participating institutions was conduc ed off the East Coast of the United States during the summer of 1965. Underwater shots varying in size from 20 pounds to 10 tons of explosive were detonated along four lines; two off the coast of North Carolina and two off the coast of Virginia. These shots were recorded at a number of land stations, both fixed and mobile, as well as at anchored buoy stations at sea. In each area one line was approximately normal to the continental margin and the other parallel to the margin near the outer edge of the continental shelf. Shot positions, shot instants and first arrival times at all participating recording stations are summarized in the tables of this paper.

Preliminary analyses of the data contributed by all of the participants for inclusion in this paper indicate a general crustal structure varying from 0.5 km of sediment overlying 30.4 km of basement for the southern profiles to 1.6 km of sediment above 8.3 km low velocity basement overlying about 16.3 km of high velocity basement in the northern area. The individual participants are expected to present more detailed summaries of their own portions of the data in subsequent papers.

INTRODUCTION

For some years past a group of North American university and research laboratories have carried out a number of large scale cooperative seismic studies of crustal structure in Montana, North Carolina, the Gulf of Maine, and the Lake Superior region. The programs were coordinated by the Department of Geophysics, University of Wisconsin, and the Department of Terrestrial Magnetism, Carnegie Institution of Washington. The 1965 East Coast Onshore Offshore Experiment (ECOOE) was planned as one of this series of crustal structure experiments and as part of the Transcontinental Geophysical Survey of the United States Upper Mantle Program. This experiment was coordinated by the Southwest Center for Advanced Studies, formerly the Graduate Research Center of the Southwest, and a general description of the experiment was published before the experiment began (Hales, 1965). A brief summary of the experiment was given by Hales et al. (1966).

Figure 1 shows the location of the one-ton, five-ton and ten-ton shots, and of the fixed observing stations. Four major profiles were shot during the experiment: two of these were more or less normal to the continental margin

and two were parallel to the shelf. These will be referred to as southern normal (SN), northern normal (NN), southern parallel (SP) and northern parallel (NP) profiles. In addition three long (up to 90 km) deep sea profiles were observed at the seaward ends of the northern and southern lines.

During the shooting of the southern profile, the U. S. Geological Survey carried out a program for the calibration of the Cumberland Plateau Observatory. The shot points used in the USGS program are shown in Figure 1 and listed in Table IV. (The Geological Survey observing stations moved in accordance with their shooting program.) Some of the shots were recorded by the on-profile ECOOE stations, and the Geological Survey stations recorded some of the shots fired at sea.

In addition to these shots, the Department of Terrestrial Magnetism, Carnegie Institution of Washington, fired four shots at Schuyler, Virginia, and four in the Chesapeake Bay area. Two of the Schuyler shots were fired while the southern profiles were being observed, the other two being fired during the northern shooting.

PARTICIPATING INSTITUTIONS

The following institutions participated in the field observations: the Crustal Studies Branch, U. S. Geological Survey; the University of Wisconsin; the Department of Terrestrial Magnetism, Carnegie Institution of Washington; the University of Michigan; Pennsylvania State University; the University of Tulsa; Boston College; Georgia Institute of Technology; the Air Force Technical Applications Center; and the Southwest Center for Advanced Studies (SCAS).

In addition to the stations specially set up for the experiment, a number of permanent stations recorded the events. The list which follows is not complete, covering only those organizations which are known to have made observations and taken part in the analysis program:

Columbia University Geophysical Field Station, Bermuda

U. S. Coast and Geodetic Survey

Lamont Geological Observatory

Geotechnical Division, Teledyne Industries

THE OBSERVING STATIONS

A list of the observing stations is given in Table I. In addition to the station identification number and location, the table gives the time for which each station was occupied.

It should be noted that the Carnegie stations were occupied as a rule for only one or two nights of shooting.

Buoy stations were operated at sea by the University of Wisconsin and the Southwest Center for Advanced Studies. These stations are listed in Table II.

The positions of some of the sea stations are known to the same precision as the land stations. (These are marked by an asterisk in the table.) For most of the sea stations the distances from the shots were determined from the water wave travel time, and thus the positions of the stations given in Table II are only approximate and may be in error by up to 3 km. (The distances from the buoys to the shots are, however, accurate to better than 0.1 km.)

THE SHOOTING PROGRAM

All the large shots (one ton or greater) were fired electrically, and the shot times quoted are those read from the oscillograph records except as otherwise noted in Table III.

A number of small shots (100 pounds or less) were fired as conditions permitted, using burning fuses for detonation and the water wave arrival at the ship for shot

instant determination. The small shots were intended to be recorded only by the buoy stations, and their times and locations are not included here. A list is available from the authors for persons desiring this information.

It is desirable that where possible the shots should be fired at a depth such that the reflection from the surface is in phase at the bubble pulse frequency. Allowing for the phase change of π at the surface, the condition for reinforcement is (Arons and Yennie, 1948)

$$4\frac{D}{V} = \frac{KW^{1/3}}{(33+D)^{5/6}}$$

where D = depth in feet,

V = velocity of sound in sea water in ft/sec,

W = weight of explosive in lbs,

and K is a constant depending on type of explosive. For Nitramon WW-EL the factor K is 4.94 (Patterson, personal communication, 1966). For 2,000-lb. charges D is found to be 450 feet, and for 10,000-lb. charges, 605 feet.

The large shots in water of depth less than 600 feet were fired on the bottom. The first of the large shots in deep water, 126, was fired at a depth of 500 feet. It was

found that the explosive cans compacted more than had been anticipated with the result that the flotation provided was not adequate to support the charges. A new suspension system was improvised, but the materials available limited the depth at which the shots were floated to 300 feet for all later shots.

Chase III was fired on July 15 and was recorded by SCAS on two buoys and one land station and by some of the University of Michigan stations.

EARLIER WORK

Several geophysical studies of the continental shelf of the eastern United States have been reported by Ewing and his collaborators during the past 30 years (Ewing, Crary and Rutherford, 1937; Ewing, Woollard and Vine, 1939, 1940; Ewing, Worzel, Steenland and Press, 1950; Miller, 1957). This work has been reviewed by Drake et al. (1959) (see this publication for additional references). Hersey et al. (1959) described a number of geophysical studies of the continental margin between Cape Henry, Virginia, and Jacksonville, Florida. In 1962 the North American Seismic Group carried out a study of the continental margin

off North Carolina. Some of the results were described in a paper by Shima et al. (1964). A more detailed description of this experiment is given by Meyer et al. (1966) and an interpretation of the results by Lewis and Meyer (1966). The observations made by the Department of Terrestrial Magnetism, Carnegie Institution of Washington, during this experiment have been discussed by Steinhart (1963).

Land Observations

In addition to the work listed above the Carnegie Institution of Washington, beginning about 1948, observed travel times in Maryland and the neighboring states from shots fired in the Patuxent River and in the Chesapeake Bay. The general conclusion from the Carnegie studies was that the crust in this region was between 30 and 35 km thick (Tuve and Tatel, 1953).

The Wisconsin group carried out seismic studies on the Atlantic coastal plain during 1952 and 1953. (This investigation was mainly concerned with the depth to basement.) The results were reported by Woollard et al. (1957). Bonini and Woollard (1960) discussed the results for the North Carolina-South Carolina plain,

including those of earlier workers. They found that in general higher basement seismic velocities corresponded with magnetic highs. From their contour map of the pre-Cretaceous basement it follows that the depth to basement is everywhere less than 0.5 km on the landward portion of the SN profile.

Shelf observations, northern profile area.

Figure 2, modified from Drake et al. (1959), shows the previous stations observed in the vicinity of the northern profiles. These consist of a number of short profiles in the Norfolk area and off Cape Henry and a section near Cape May. Ewing et al. (1950) give a section for the Cape May profile from which Figure 3 has been derived. The authors estimate basement velocities varying between 17,150 ft/sec (5.23 km/sec) and 18,750 ft/sec (5.72 km/sec) with an average of 18,000 ft/sec (5.49 km/sec). The velocity of the semi-consolidated sediments increases seaward to a value of about 13,700 ft/sec (4.18 km/sec). The Cape Henry section shows the crystalline rock surface to dip seaward in similar fashion to the Cape May section. The basement velocities are similar to those at Cape May. Moore and

Curray (1963) describe reflection profiles off Norfolk, Virginia, and infer that the continental terrace is depositional in origin. Uchupi and Emery (1957) report reflection profiles near the Atlantic coastal margin of the United States. Prograding is general. In some cases reflecting horizons are truncated at the continental slope. In a few cases there is renewed deposition after truncation.

Shelf observations, southern profile area.

The locations of the Hersey et al. (1959) profiles in the region adjacent to the southern profiles are shown in Figure 4. Hersey et al. show a section roughly parallel to the coast, a portion of which has been reproduced as Figure 5. It shows the dominant feature of the structure on the shelf between Cape Henry and 30° N to be the Cape Fear Arch. The Hersey et al. section parallel to the shore shows that the ECOOE parallel profile was shot along the northern flank of this arch.

Deep sea profiles, northern profile area

Drake et al. (1959) and Katz and Ewing (1956) have presented data for a number of deep sea profiles near the northern ECOOE profiles. Figure 6 taken from Katz and Ewing (1956) presents a section close to the ECOOE NP line.

The landward end of the line is from Tatel et al. (1953, figures 5 and 6) and gives a mantle velocity of 8.06 km/sec at a depth of 32 km. The shelf portion is interpreted from the Cape May and Cape Henry sections of Ewing et al. (1950).

Deep sea profiles, southern profile area.

Hersey et al. have tabulated the results from deep sea profiles observed in the area south of Cape Hatteras of which only one profile is close to the ECOOE southern deep sea profile. A characteristic feature of the deep sea profiles reported by Hersey et al. is that a layer with velocity 7.1 to 7.7 km/sec lies below the layer with velocity 6.15 to 6.74 which would ordinarily be regarded as characteristic of the oceanic crust. Furthermore, the profiles on the slope between the foot of the continental rise and the deep ocean are distinguished by a considerable thickness of material with velocity between 3.8 and 4.4 km/sec.

The structure in and around Blake Plateau is clearly complex, and it is suggested by Hersey et al. that there is a deep sediment-filled trough roughly parallel to the coast which may be continuous with the easternmost of the

two roughly parallel sediment-filled trenches found by Drake et al. (1957, 1959) at the foot of the continental rise north of Cape Hatteras.

MAGNETIC OBSERVATIONS IN THE ECOOE AREA

There have been several published reports of the magnetic anomalies along the Atlantic shelf of North America. Among them are Keller et al. (1954), King et al. (1961), Drake et al. (1963) and Watkins and Geddes (1965). Drake et al. have correlated anomalies continuously over many tens of kilometers. They are represented by a series of trends (Figure 7) parallel to the edge of the shelf north of Cape Hatteras with an offset near 40° N. Near Cape Hatteras these trends converge. According to Drake et al.(1963) "...south of Cape Fear there is considerable branching..." of these trends. One set swings southeast along the edge of the Blake Plateau and another strikes southwest into the Florida Peninsula. The anomaly north of Cape Hatteras near the shelf edge has been correlated with a seismically determined ridge in the basement, though the anomaly-producing material is thought to be within the basement. It is remarked that "basement topography alone

will not produce the anomalies" and "that material within the basement may control both magnetic anomalies and the shape of the basement" (Drake et al.,1963). South of Cape Hatteras no such correlation has been possible due to sparsity of seismic data.

The ECOOE data between Cape Hatteras and Cape Fear indicate little relief on the basement surface. The strong anomalies shown by Drake et al. in this area are therefore not due to structure on the top of the basement but probably result from structure within the basement as suggested for the anomalies north of Cape Hatteras by King et al. and Drake et al.

SHOT LOCATIONS: NORTHERN PROFILES

In previous experiments of this series (Lake Superior 1963 (Steinhart, 1964) and the Gulf of Maine (Steinhart et al., 1964),shot locations were determined on the basis of direct water arrivals at a set of fixed hydrophone stations along the shore. This technique works well as long as the hydrophone stations are more or less evenly distributed in azimuth about the shot point.

For the East Coast Experiment this was not possible, since all of the possible stations were at one end of the

line, and thus small errors in arrival time or water velocity would create large errors in position. As a result of this and other logistical factors, it was decided to rely mainly on LORAN C navigation for the determination of shot locations, with off-line buoys as a backup for, and check of, the LORAN C navigation. Estimates of the accuracy of location of LORAN C, calculated from the accuracy with which readings can be made under laboratory conditions and the geometry of the system, are in general of the order of 15 to 20 meters. It was thought that a real field accuracy of about 100 meters could be achieved at sea, but it was anticipated that the accuracy of location would be somewhat less near the baseline extension, i.e. for the close-in shots on the northern profile. We felt, however, that provided the readings in this region were made with great care, locations would be accurate to 300 meters, the accuracy deemed necessary for the purposes of the experiment.

Navigation during the course of the shooting was based on the use of transparent overlays of the LORAN C hyperbolas constructed from the LORAN C tables (LORAN-C Table Pair SO X and LORAN-C Table Pair SO-Y, Publication No. 221, U. S. Naval Oceanographic Office, 1964). Shortly

after the experiment a preliminary list of locations made using these overlays was issued for use by participants (southern profile, July 28, 1965, and northern profile, August 2, 1965). A revised list, for which graphical or numerical interpolation from the LORAN C tables was used, was issued later (September 7, 1965).

It was thought that these locations might be modified by tenths of minutes when the data were run through a computer program. However, when we began to work up the data from the buoys anchored on the NN profile, it became apparent that there were serious discrepancies between the distances inferred from the water wave arrival times and those calculated from the LORAN C positions. In order to make these two sets of distances compatible for shots 303 through 320, it was necessary to use a water velocity corresponding to a temperature well below $0^{\circ}C$.

Up to this stage we had been using water wave data from SCAS buoys only. Dr. R. P. Meyer kindly sent us preliminary readings from the University of Wisconsin buoys, and these data confirmed independently the conclusions reached on the basis of the SCAS buoy data. It was known that the temperature of the deep water on the shelf (depth

of water less than 200 meters) was not less than 8°C, while the surface water temperature measured by the buoy tending ship was about 23°C. This range of temperature corresponds to water wave velocities between 1.480 and 1.530 km/sec. The LORAN C data suggested that the velocity should be 1.450 km/sec. Thus we began to look for possible systematic errors in the LORAN C positions.

For the NN profile an appreciable portion of the path from the Cape Fear LORAN C station lay over land. It had been shown by Johler et al. (1956) that a phase delay is produced by transmission over a medium of low conductivity. It was thought probable that the phase delay due to the overland path from Cape Fear was responsible for the discrepancies between the LORAN C and water wave data. Corrections for the overland portion of the path from the Cape Fear station (for the other stations the overland path was relatively short) were made on the basis of the Johler curves (Figures 2 and 3 in Johler et al., 1956) for land (conductivity 0.05 mho/cm) and sea water (conductivity 5.0 mho/cm). The corrections amounted to 2.2 μ sec in the SO-X reading at the inshore end of the line and about 1 μ sec at the shelf edge. These corrections were in the right sense

to remove the inconsistency between the water wave times and the LORAN C distances.

These corrections were applied to all readings for the northern profile and new positions calculated by the Navy Oceanographic Office. At the same time the Oceanographic Office computed locations based on their own LORAN C correction charts (U. S. Naval Oceanographic Office LORAN C secondary Phase Correction Charts 16707-CC-3a and -3b). The results of these corrections for shots 303 to 308 are shown in Figures 8 and 9.

The shot locations based on our empirical correction (using the Johler curves) were subsequently modified slightly to include a small SO-Y correction scaled from that given by the Oceanographic Office. As can be seen from the portion of the LORAN C grid reproduced on Figure 9, any error resulting from phase delay or reading error is from 10 to 12 times greater for the SO-X coordinate than for SO-Y. This is, of course, a consequence of our operating near the baseline extension of the SO-X pair of LORAN C stations.

It follows that the errors in the SO-Y coordinate lines would be at most 0.1 km and that the shot position

lies along the line joining the three locations, (a) no correction for phase delay, (b) Navy correction, and (c) SCAS-Johler correction, which is 4 km long for shot 303. (Figure 8 and 9).

Two sets of data are available to reduce this uncertainty in shot location. The largest set of data is that of the water arrival times from the SCAS and University of Wisconsin anchored buoys, to which reference has already been made. Unfortunately, this set fixes only the positions of the shots relative to one another and not the positions relative to land, for the buoys were placed using LORAN A navigation, and it was found that, although anchored, the positions determined from LORAN A varied by several kilometers from one servicing to the next. As will be shown below, the consistency of the water wave data shows that the buoys did not drift more than a few hundred meters, which is about the length of the anchor line and hydrophone cables, with the exception of one which was apparently run down by a ship and cut loose from its anchor between shots 308 and 309.

In some cases the shooting ship observed the buoys by radar, and thus the buoys can be located approximately

from the LORAN C position of the ship at the time of sighting and the radar range and bearing. Errors in the radar range observations appeared to be about 10%, and these observations have been used principally to determine on which side of the shotline the buoys lay.

The second set of data, although smaller, is important in that it provided a means of location relative to land. For the shots fired the first night (303 - 308 at sea; 603 - 604 in Chesapeake Bay) the SCAS land stations located on the Delaware Peninsula observed a low-frequency signal (2 - 3 cps) which arrived very much later than any ordinary surface wave. The apparent velocity across the stations and arrays was between 0.330 and 0.350 km/sec with the higher velocities coming from the sea and the lower ones from the Chesapeake shots. On the second night similar arrivals were observed for the Chesapeake shots (607 - 608), but not from the sea even though the first three sea shots (309 - 311) overlapped the first night's shooting. On this night the apparent velocities from the Chesapeake shots were at the high end of the range in contrast with lower-than-average velocities on the first night.

A reasonable explanation for these arrivals is that they were air waves with a wind vector toward land on the first night and toward the sea on the second. Travel times were plotted against distance for these arrivals using the corrected LORAN C position and two hypothetical shot points lying on the SO-Y line, 2 km inshore and 2 km offshore of the corrected LORAN C position. From these plots least-square determinations of velocity and intercept were made, and the velocity corresponding to zero intercept was determined by interpolation. It should be noted that the velocity of 0.3505 km/sec so determined is an average for the whole path.

This air wave velocity could be checked by two methods; first by determining an air wave velocity over the three-station array: Withams, Silva and Chincoteague. The velocity so found ranged between 0.3437 and 0.3521. In most of the determinations the velocities are somewhat smaller than that found from the least-squares solution, but, of course, refer only to the landward end of the path. The difference can be interpreted in terms of cooler night temperatures over the land, or in terms of an onshore wind at low altitude. The latter alternative seems more likely,

for it also provides a means of bringing the sound wave back to the surface. The meteorological data from Wallops Island station at 0515 on July 7 support this conclusion. However, the coverage of the sea portion of the path is not adequate for this to be regarded as conclusive.

A second check was made using the Chesapeake shots, the locations of which were more accurately known than of those at sea, to obtain a wind velocity along the shooting line. Using this wind velocity we determined the sonic velocity relative to the surface from the sea shots to the recording stations. This approach was aided by a very good set of air wave records from shot 604 (fired only a half hour before 303) at the Withams station and the fortunate positioning of the Withams array very near the shot line. It was hindered by the lack of air temperature data to determine sound velocity in still air. The velocity determined between shot point and station was 0.340 km/sec with an assumed zero intercept. This was confirmed by the velocity across the array. The still-air velocity was in the range of 0.345 to 0.347 km/sec based on temperature estimates on the peninsula of $75^{o} \pm 2.5^{o}F$,

indicating that the wind vector along the shot line was from the sea at 0.005 - 0.007 km/sec. This would give a sonic velocity range of 0.350 to 0.354 km/sec from shots 303 - 308 to the recording station which brackets the velocity of 0.3505 obtained by least-squares. Although the uncertainty of the air temperature limits the usefulness of this check, it does show that the error of the least-squares velocity of 0.3505 km/sec is at worst ± 0.005 km/sec and probably less than 0.002 - 0.003 km/sec. Thus for shot 303 with a travel time of about 100 seconds, the positioning error should be considerably less than 0.5 km.

The air velocity interpolated from the least-squares solution was used with the observed travel times to determine locations for shots 303 to 308 on the SO-Y lines, and these shot positions were then used with water wave travel times to locate the inshore buoy 2329. The process is illustrated in Figure 8. Insofar as accuracy is concerned it may be noted that if a velocity of 0.346 km/sec (still air velocity under conditions prevailing at time of shots) had been used, the whole line would be moved inshore by at most 0.45 km. The least-squares solution is, however, more accurate than this, for it rests upon

travel times over the whole path, whereas the other velocities of 0.3 km/sec were determined from differences in travel time over the landward end of the paths.

Using the above derived sound velocity, the observed travel times, and the corrected SO-Y line, shot positions were determined for shots 303 - 308. These best air wave shot positions were then used to locate buoy 2329.

The water velocity below the thermocline was found using bathythermograph data observed along $37^{o}10'N$ for depths down to 35 meters on June 28, 1965, and July 27, 1965, by Mr. J. J. Norcross and Mr. M. M. Nichols of the Virginia Institute of Marine Science (personal communication, 1966). These data give a temperature below 20 meters of $8^{o} \pm 2^{o}C$ from which a water velocity of 1.482 km/sec was derived.

This velocity of 1.482 km/sec and the observed water wave travel times at buoy 2329 were then used to determine the distances to each of the shots. These distances in conjunction with the corrected SO-Y line were then used to find "best fitting" buoy locations for buoys 2330, 1332, 1333, 1334, 2335 and 1336. Once these "best" buoy locations had been determined, they were used, again in conjunction with the corrected SO-Y line and travel time data, to

locate all of the shots. The locations so determined for shots 303 - 320 are given in Table III and illustrated in Figure 9.

As a check of the entire procedure, an air velocity was calculated using the shot positions found from the water wave arrival time data. This differed only slightly (approximately 0.003 km/sec) from the velocity used to calculate the position of buoy 2329. This indicates that a small error (0.2 km) may exist in the absolute location of shots 303 - 320 with respect to land. An error of this magnitude is not significant from the point of view of the seismic interpretation.

Relation between the final locations and corrected LORAN C observations

The final shot positions as determined by the techniques described above lay between the Navy corrected LORAN C positions and the SCAS corrected LORAN C positions with the shots closest to shore showing the most deviation from the Navy position. As the shelf edge is approached (shots 315, 316 and 320) the position determined by water wave times and the Navy corrected LORAN C positions agree very well. Thus we have the Navy corrected LORAN C positions for all

shots after 320 including those on the NP line for which LORAN C observations are available. Those shots on the NP line for which no LOPAN C positions were determined have much larger errors and have been individually discussed in the notes to the shot location table (Table III). The final locations of the northern profile shots are given in Table III and plotted in Figure 11.

SHOT LOCATIONS: SOUTHERN PROFILES

Apparently none of the above mentioned problems existed for the southern profiles, for here the Navy corrections are small and the SO-X and SO-Y grids are more comparable in overall dimensions. Water wave data along line segments up to 50 km long support this conclusion. The shot locations for the southern profiles are listed in Table III and plotted in Figure 10.

THE TRAVEL TIMES

We present in Table V first arrival times for all stations both on land and sea. In some cases later arrival times are given. In these tables the observations on the southern profiles are given first, the subgrouping being

by station number and thus by organization responsible for the readings. The observations on the northern profiles follow.

THE RESULTS

The individual participants in the experiment are analyzing their own data, and interpretations will be presented in a series of papers. For the present, to give a broad view of the travel time information, we present first arrival times for the land stations in four figures. Figure 12 shows all SN first arrivals from 0 to 180 km in a reduced travel time plot, the reduction velocity being 6 km/sec. Figure 13 presents all SN first arrival information as reduced travel times, the reduction velocity being 8 km/sec. Figures 14 and 15 present similar information for the NN profile.

For the southern profile we have fitted straight lines by least squares (a) to the first arrival data from 10 to 140 km and (b) to the first arrival data beyond 180 km. Assuming a sedimentary velocity of 1.7 km/sec, we find the structure given in Table VI. This, of course, should only be regarded as an average structure for the area. The

individual analyses may show quite considerable local deviations from it.

For the northern profiles we have chosen to divide the first arrivals into three groups. The least squares analyses yield

$T = D/5.78 + 1.45$ (15 - 80 km)

$T = D/6.34 + 2.65$ (90 - 150 km)

$T = D/7.97 + 6.60$ (150 - 525 km)

For the third equation we have used only those points lying inside the block shown on Figure 15. These are arrivals from shelf shots with only a few exceptions. Clearly there are many other arrivals outside the block, most of which represent arrivals from deep water shots. In general the arrivals at distances greater than 500 km appear to be late by about two seconds with respect to the third equation.

For the structure given in Table VI we assumed that sediments with average velocity 2.1 km/sec overlay the layer with velocity 5.78. The data at sea suggest that the sediments on the shelf are thicker. The value given in the table is of course a mean value for the two ends of the path. The structure is to be regarded as no more than a broad average structure for the area.

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REFERENCES

Arons, A. B. and D. R. Yennie, "Energy partition in underwater explosion phenomena," Rev. Mod. Phys., 20, 519-536, 1948.

Bonini, W. E. and G. P. Woollard, "Subsurface geology of North Carolina-South Carolina coastal plain from seismic data," Bull. Am. Assoc. Petrol. Geologists, 44, 298-315, 1960.

Drake, C. L., G. H. Sutton and M. Ewing, "Continental margins and geosynclines: East coast of North America north of Cape Hatteras (Abstract), Bull. Geol. Soc. Am., 68, 1718-1719, 1957.

Drake, C. L., M. Ewing and G. H. Sutton, "Continental margins and geosynclines: The east coast of North America north of Cape Hatteras," Physics and Chemistry of the Earth Vol. 3, edited by L. H. Ahrens, F. Press, K. Rankama, and S. K. Runcorn, Pergamon Press, 110-198, 1959.

Drake, C. L., J. Heirtzler and J. Hirshman, "Magnetic anomalies off eastern North America," J. Geophys. Res., 68, 5259-5275, 1963.

Ewing, M., A. P. Crary and H. M. Rutherford, "Geophysical investigations in the emerged and submerged Atlantic Coastal Plain, Part I: Methods and results," Bull. Geol. Soc. Am., 48, 753-802, 1937.

Ewing, M., G. P. Woollard and A. C. Vine, "Geophysical investigations in the emerged and submerged Atlantic Coastal Plain, Part III: Barnegat Bay, New Jersey, section," Bull. Geol. Soc. Am., 50, 257-296, 1939.

Ewing, M., G. P. Woollard and A. C. Vine, "Geophysical investigations in the emerged and submerged Atlantic Coastal Plain, Part IV: Cape May, New Jersey, section," Bull. Geol. Soc. Am., 51, 1821-1840, 1940.

Ewing, M., J. L. Worzel, N. C. Steenland and F. Press, "Geophysical investigations in the emerged and submerged Atlantic Coastal Plain, Part V: Woods Hole, New York, and Cape May sections," Bull. Geol. Soc. Am., 61, 877-892, 1950.

Hales, A. L., "East Coast Onshore Offshore Experiment," VESIAC Special Bulletin, 6-14, June 10, 1965.

Hales, A. L., C. E. Helsley, J. J. Dowling and J. B. Nation, "Some logistics of the East Coast Onshore Offshore Experiment (ECOOE)," Earthquake Notes, Vol. XXXVII, 25-32, 1966.

Hersey, J. B., E. T. Bunce, R. F. Wyrick and F. T. Dietz, "Geophysical investigation of the continental margin between Cape Henry, Virginia, and Jacksonville, Florida," Bull. Geol. Soc. Am., 70, 437-466, 1959.

Johler, J. R., W. J. Keller and L. C. Walters, "Phase of the low radiofrequency ground wave," Nat'l. Bur. Standards Circular 573, 38 p., 1956.

Katz, S. and M. Ewing, "Seismic-refraction measurements in the Atlantic Ocean, Part VII: Atlantic Ocean Basin, west of Bermuda," Bull. Geol. Soc. Am., 67, 475-510, 1956.

Keller, F., Jr., J. L. Meuschke and L. R. Alldredge, "Aeromagnetic surveys in the Aleutian, Marshall and Bermuda Islands," Trans. Am. Geophys. Union, 35, 558-572, 1954.

King, E. R., I. Zietz and W. J. Dempsey, "The significance of a group of aeromagnetic profiles off the eastern coast of North America," U.S. Geol. Surv., Professional Paper 424-D, 299-303, 1961.

Lewis, B. T. R. and R. P. Meyer, "1962 North Carolina Cooperative Experiment," in press.

Meyer, R. P., B. T. R. Lewis, J. S. Steinhart, B. F. Howell, W. E. Bonini and D. E. Willis, "1962 North Carolina Cooperative Experiment shot positions, shot times, and travel times," in press.

Miller, B. L., "Geophysical investigations in the emerged and submerged Atlantic Coastal Plain, Part II: Geological significance of the geophysical data," Bull. Geol. Soc. Am., 48, 803-812, 1937.

Moore, D. G. and J. R. Curray, "Sedimentary framework of continental terrace off Norfolk, Virginia, and Newport, Rhode Island," Bull. Am. Assoc. Petrol. Geologists, 47, 2051-2054, 1963.

Shima, F., K. McCamy and R. P. Meyer, "A Fourier transform method of apparent velocity measurement," Bull. Seism. Soc. Am., 54, 1843-1854, 1964.

Steinhart, J. S., "Lake Superior Seismic Experiment: shots and travel times," J. Geophys. Res., 69, 5335-5352, 1964.

Steinhart, J. S., T. J. Smith, I. S. Sacks, R. Sumner, Z. Suzuki, A. Rodriguez, C. Lomnitz, M. A. Tuve and L. T. Aldrich, "Seismic Studies: Explosion Seismology," Carnegie Inst. Washington Year Book 62, 280-282, 1963.

Steinhart, J. S., Z. Suzuki, T. J. Smith, L. T. Aldrich and I. S. Sacks, "Seismic Studies: Explosion Seismology," Carnegie Inst. Washington Year Book 63, 311-319, 1964.

Tatel, H. E. and M. A. Tuve, "Seismic waves from explosions," Carnegie Inst. Washington Year Book 51, 67-70, 1952.

Tatel, H. E., M. A. Tuve and L. H. Adams, "Studies of the Earth's crust using waves from explosions," Proc. Am. Phil. Soc., 97, 658-669, 1953.

Uchupi, E. and K. O. Emery, "Structure of continental margin off Atlantic Coast of United States," Bull. Am. Assoc. Petrol. Geologists, 51, 223-234, 1967.

Watkins, J. S. and W. H. Geddes, "Magnetic anomaly and possible orogenic significance of geologic structure of the Atlantic Shelf," J. Geophys. Res., 70, 1357-1361, 1965.

Woollard, G. P., W. E. Bonini and R. P. Meyer, "A seismic refraction study of the sub-surface geology of the Atlantic coastal plain and continental shelf between Virginia and Florida," Univ. Wisc. Dept. Geol. Geophysics Sec., Madison, 128 pp., 1957.

--------, LORAN Secondary Phase Correction Charts, East Coast, SO-X (No. 16707-CC-3a) and SO-Y (16707-CC-3b), U. S. Naval Oceanographic Office, 1963.

-------, LORAN-C Table Pair SO-X, Publication No. 221 (1001), U. S. Naval Oceanographic Office, 1964.

-------, LORAN-C Table Pair SO-Y, Publication No. 221 (1002), U. S. Naval Oceanographic Office, 1964.

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Figure 1. Location of shot points and recording stations. Temporary stations (those which moved frequently during the shooting program) are not shown.

Figure 2. Location of previous seismic work in the vicinity of the ECOOE northern profiles, after Drake et al. (1959).

Figure 3. Structure section for the Cape May profile shown in Figure 2.

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Figure 15. Reduced travel time plot of NN profile with reduction velocity of 8 km/sec.

TABLE 1
RECORDING STATIONS ON LAND

STATION NO	NAME	LATITUDE DEG	MIN	LONGITUDE DEG	MIN	OCCUPIED FROM	TO	OPERATOR
1101	TIGER	34	34.31	77	42.49	0612	0702	WISCONSIN
1102	GAMMA	34	39.19	77	52.75	0612	0702	WISCONSIN
1103	HOTEL	34	49.84	78	12.42	0612	0702	WISCONSIN
1104	CHARLY	34	52.25	78	23.24	0612	0702	WISCONSIN
1105	TIGER	38	03.36	75	28.44	0706	0719	WISCONSIN
1106	GAMMA	38	00.92	76	00.98	0706	0719	WISCONSIN
1107	HOTEL	38	08.65	76	20.45	0706	0719	WISCONSIN
1108	CHARLY	38	33.43	77	04.78	0706	0719	WISCONSIN
2100	HLR-8E	34	34.71	77	32.49	0612	0702	SCAS(GRC)
2105	HLR-3E	34	34.91	77	33.05	0612	0702	SCAS(GRC)
2120	SRFCTY	34	25.48	77	32.83	0620	0629	SCAS(GRC)
2130	SNDFRD	34	31.01	77	23.17	0623	0628	SCAS(GRC)
2150	SLVA4E	37	59.40	75	26.41	0706	0719	SCAS(GRC)
2160	WTHM4E	37	57.86	75	35.80	0706	0719	SCAS(GRC)
2167	WTHM4W	37	58.10	75	36.71	0706	0719	SCAS(GRC)
2170	CHTGUE	37	55.79	75	22.02	0706	0719	SCAS(GRC)
2180	SWLFLS	39	30.16	79	24.62	0707	0715	SCAS(GRC)
3001	BRAGG	35	08.48	79	06.34	0619	0702	TULSA
3002	PLATA	38	34.33	76	53.76	0706	0714	TULSA
3101	GEOTEC	35	29.11	79	48.17	0612	0702	GA TECH
3101	SHELL	35	29.11	79	48.17	0612	0702	GA TECH
3102	GEOTEC	38	40.00	77	23.92	0706	0714	GA TECH
3102	SHELL	38	40.00	77	23.92	0706	0719	GA TECH
3103	GEOTEC	35	53.62	75	55.41	0715	0719	GA TECH
3203	PSU	38	14.06	76	26.34	0706	0719	PENN STATE
3301	POTTLR	34	57.67	77	43.83	0619	0629	MICHIGAN
3302	AVENIN	36	09.33	78	01.75	0619	0626	MICHIGAN
3303	MOROCK	36	52.30	78	40.33	0619	0621	MICHIGAN
3350	BWATER	38	26.38	76	07.00	0706	0719	MICHIGAN
3351	TAYLOR	39	13.75	77	34.67	0706	0719	MICHIGAN
3352	BURNBR	39	26.83	99	43.92	0706	0712	MICHIGAN
4102	UPSTRT	38	12.85	76	59.40	0629	0630	CARNEGIE
4104	UPSTRT	37	52.92	77	1.13	0717	0718	CARNEGIE
4106	UPSTRT	37	59.21	76	46.72	0628	0629	CARNEGIE
4106	UPSTRT	37	59.21	76	46.72	0717	0718	CARNEGIE
4108	UPSTRT	37	52.22	76	16.22	0718	0719	CARNEGIE
4110	UPSTRT	37	30.97	77	4.44	0627	0628	CARNEGIE
4112	UPSTRT	37	28.95	76	42.88	0716	0717	CARNEGIE
4114	UPSTRT	37	26.12	76	27.97	0716	0717	CARNEGIE
4116	UPSTRT	37	9.98	77	7.60	0620	0621	CARNEGIE
4118	UPSTRT	37	7.31	76	47.02	0713	0714	CARNEGIE
4122	UPSTRT	36	51.08	77	37.30	0706	0707	CARNEGIE
4124	UPSTRT	36	47.46	77	12.97	0621	0622	CARNEGIE
4124	UPSTRT	36	47.40	77	12.98	0706	0707	CARNEGIE
4126	UPSTRT	36	46.37	76	48.15	0710	0713	CARNEGIE
4128	UPSTRT	36	44.49	76	21.99	0711	0712	CARNEGIE
4132	UPSTRT	36	31.19	77	38.53	0707	0708	CARNEGIE
4134	UPSTRT	36	30.70	77	16.72	0707	0708	CARNEGIE
4136	UPSTRT	36	28.01	76	53.77	0710	0711	CARNEGIE
4138	UPSTRT	36	23.82	76	33.47	0625	0626	CARNEGIE
4140	UPSTRT	36	21.11	76	7.28	0623	0624	CARNEGIE
4142	UPSTRT	36	11.67	75	52.88	0624	0625	CARNEGIE

STATION NO	NAME	LATITUDE DEG	MIN	LONGITUDE DEG	MIN	OCCUPIED FROM	TO	OPERATOR
4202	ZULU	36	5.95	77	36.86	0706	0707	CARNEGIE
4204	ZULU	36	7.96	77	20.45	0629	0630	CARNEGIE
4204	ZULU	36	7.96	77	20.45	0706	0707	CARNEGIE
4206	ZULU	36	3.81	76	55.52	0710	0711	CARNEGIE
4208	ZULU	36	10.29	76	37.99	0710	0713	CARNEGIE
4210	ZULU	35	59.21	76	9.25	0625	C 26	CARNEGIE
4212	ZULU	35	57.40	75	48.50	0627	0628	CARNEGIE
4216	XECKS	35	50.85	78	6.69	0621	0622	CARNEGIE
4218	ZULU	35	48.30	77	43.10	0621	0622	CARNEGIE
4220	XECKS	35	47.50	77	20.10	0624	0625	CARNEGIE
4222	ZULU	35	43.16	77	1.71	0624	0625	CARNEGIE
4222	ZULU	35	43.16	77	1.71	0707	0708	CARNEGIE
4224	ZULU	35	40.98	76	32.76	0711	0714	CARNEGIE
4226	XECKS	35	33.25	76	15.35	0625	0626	CARNEGIE
4228	XECKS	35	42.33	75	46.08	0627	0628	CARNEGIE
4232	XECKS	35	25.10	78	10.50	0623	0624	CARNEGIE
4234	ZULU	35	24.65	77	48.29	0623	0624	CARNEGIE
4236	ZULU	35	25.30	77	24.31	0718	0719	CARNEGIE
4238	ZULU	35	22.93	77	6.27	0707	0708	CARNEGIE
4240	ZULU	35	20.14	76	38.20	0717	0718	CARNEGIE
4242	ZULU	35	28.66	76	29.66	0711	0712	CARNEGIE
4246	ZULU	35	4.52	77	26.92	0716	0717	CARNEGIE
4248	ZULU	35	1.59	77	4.03	0716	0717	CARNEGIE
4250	ZULU	35	0.98	76	48.89	0717	0718	CARNEGIE
4302	YOKE	36	42.49	80	52.08	0611	0612	CARNEGIE
4302	YOKE	36	42.49	80	52.08	0621	0622	CARNEGIE
4304	TASMAN	36	40.90	80	27.20	0612	0613	CARNEGIE
4304	TASMAN	36	40.90	80	27.20	0627	0628	CARNEGIE
4308	YOKE	36	34.35	79	36.75	0625	0626	CARNEGIE
4310	YOKE	36	38.66	79	16.96	0624	0626	CARNEGIE
4312	YOKE	36	37.66	78	46.00	0627	0628	CARNEGIE
4312	YOKE	36	37.66	78	46.00	0717	0718	CARNEGIE
4314	YOKE	36	35.77	78	31.64	0717	0718	CARNEGIE
4316	YOKE	36	36.14	78	6.60	0628	0629	CARNEGIE
4316	YOKE	36	36.14	78	6.60	0718	0719	CARNEGIE
4320	YOKE	36	19.90	80	57.30	0628	0629	CARNEGIE
4320	YOKE	36	22.53	80	53.27	0706	0707	CARNEGIE
4322	YOKE	36	19.80	80	30.67	0707	0708	CARNEGIE
4324	YOKE	36	13.86	80	8.23	0707	0708	CARNEGIE
4326	YOKE	36	12.51	79	46.05	0624	0625	CARNEGIE
4326	YOKE	35	12.51	79	46.05	0710	0711	CARNEGIE
4328	YOKE	36	16.96	79	18.79	0716	0717	CARNEGIE
4330	YOKE	36	11.81	78	56.90	0627	0628	CARNEGIE
4332	YOKE	36	14.03	78	33.17	0629	0630	CARNEGIE
4332	YOKE	36	14.03	79	33.17	0718	0719	CARNEGIE
4334	YOKE	36	14.63	78	12.29	0711	0712	CARNEGIE
4340	YOKE	35	58.14	80	11.22	0622	0624	CARNEGIE
4342	YOKE	35	54.61	79	52.91	0623	0624	CARNEGIE
4344	YOKE	35	55.44	79	26.06	0713	0714	CARNEGIE
4348	YOKE	35	56.15	78	36.98	0712	0713	CARNEGIE
4402	VIRGNA	37	44.23	79	56.23	0615	0619	CARNEGIE
4402	VIRGNA	37	44.23	79	56.23	0716	0717	CARNEGIE
4404	VIRGNA	37	40.92	79	33.54	0627	0628	CARNEGIE
4406	VIRGNA	37	41.45	79	7.37	0628	0629	CARNEGIE
4408	STIMES	37	45.13	78	43.90	0706	0707	CARNEGIE
4408	SUVA	37	45.13	78	43.90	0612	0719	AFTAC
4410	VIRGNA	37	37.52	78	20.25	0620	0621	CARNEGIE
4414	VIRGNA	37	24.51	79	58.21	0629	0630	CARNEGIE

STATION NO	NAME	LATITUDE DEG	MIN	LONGITUDE DEG	MIN	OCCUPIED FROM	TO	OPERATOR
4414	VIRGNA	37	24.51	79	58.21	0716	0617	CARNEGIE
4416	VIRGNA	37	24.86	79	37.49	0710	0712	CARNEGIE
4418	VIRGNA	37	20.33	79	13.26	0619	0620	CARNEGIE
4418	VIRGNA	37	20.33	79	13.26	0712	0713	CARNEGIE
4420	VIRGNA	37	18.28	78	51.05	0611	0612	CARNEGIE
4420	VIRGNA	37	18.28	78	51.05	0619	0620	CARNEGIE
4420	VIRGNA	37	18.28	78	51.05	0707	0708	CARNEGIE
4422	VIRGNA	37	11.18	78	20.77	0707	0708	CARNEGIE
4422	VIRGNA	37	11.18	78	20.77	0718	0719	CARNEGIE
4424	VIRGNA	37	13.43	77	56.21	0621	0622	CARNEGIE
4428	WAYOUT	37	2.66	80	25.22	0628	0629	CARNEGIE
4430	VIRGNA	37	2.00	80	1.68	0717	0718	CARNEGIE
4432	VIRGNA	36	59.80	79	39.16	0612	0613	CARNEGIE
4432	VIRGNA	36	59.80	79	39.16	0718	0719	CARNEGIE
4434	VIRGNA	36	56.64	79	15.13	0713	0714	CARNEGIE
4436	VIRGNA	36	57.80	78	50.02	0623	0624	CARNEGIE
4438	VIRGNA	36	54.26	78	25.10	0706	0707	CARNEGIE
4440	VIRGNA	36	52.96	77	59.29	0706	0707	CARNEGIE
4502	FNWV	38	32.97	79	30.78	0612	0719	AFTAC
4506	WAYOUT	38	42.98	78	34.87	0716	0717	CARNEGIE
4508	TASMAN	38	39.22	78	8.95	0717	0718	CARNEGIE
4510	STIMES	38	40.58	77	43.26	0712	0713	CARNEGIE
4512	WAYOUT	38	24.27	79	32.48	0712	0713	CARNEGIE
4514	WAYOUT	38	22.67	79	6.64	0706	0707	CARNEGIE
4516	WAYOUT	38	24.18	78	43.72	0717	0718	CARNEGIE
4518	WAYOUT	38	25.65	78	8.01	0718	0719	CARNEGIE
4520	XECKS	38	16.98	77	46.39	0716	0717	CARNEGIE
4522	TASMAN	38	19.32	77	23.05	0706	0707	CARNEGIE
4526	WAYOUT	38	6.67	79	31.05	0710	0712	CARNEGIE
4528	WAYOUT	38	3.66	79	10.16	0706	0707	CARNEGIE
4530	WAYOUT	38	7.67	78	41.28	0707	0708	CARNEGIE
4532	WAYOUT	37	58.08	78	20.11	0707	0708	CARNEGIE
4534	TASMAN	37	56.80	77	49.90	0711	0712	CARNEGIE
4536	TASMAN	37	49.10	77	26.40	0710	0711	CARNEGIE
4536	TASMAN	37	49.10	77	26.40	0713	0714	CARNEGIE
4538	TASMAN	37	30.22	77	56.35	0707	0708	CARNEGIE
4542	TASMAN	37	21.40	77	35.40	0712	0713	CARNEGIE
4544	TASMAN	37	49.21	77	30.80	0713	0714	CARNEGIE
4602	TASMAN	37	56.50	83	13.10	0615	0616	CARNEGIE
4618	TASMAN	37	12.40	83	20.70	0619	0620	CARNEGIE
4624	TASMAN	37	6.25	82	1.20	0621	0622	CARNEGIE
4626	TASMAN	37	10.70	81	34.40	0623	0624	CARNEGIE
4628	TASMAN	37	4.90	81	11.80	0624	0626	CARNEGIE
4628	TASMAN	37	4.90	81	11.80	0629	0630	CARNEGIE
4630	YOKE	37	2.60	82	54.18	0619	0620	CARNEGIE
4632	YOKE	36	49.22	82	26.85	0620	0621	CARNEGIE
4636	TASMAN	36	46.85	81	36.90	0612	0616	CARNEGIE
4646	TASMAN	37	0.14	81	21.5	0629	0630	CARNEGIE
4650	CGVA	36	37.58	83	15.60	0612	0719	AFTAC
4704	WAYOUT	38	35.70	81	57.27	0615	0616	CARNEGIE
4706	WAYOUT	38	6.78	80	16.22	0627	0628	CARNEGIE
4706	XECKS	38	6.78	80	16.22	0706	0707	CARNEGIE
4710	WAYOUT	38	8.20	81	3.80	0625	0626	CARNEGIE
4720	WAYOUT	37	44.20	80	21.50	0611	0612	CARNEGIE
4720	WAYOUT	37	44.20	80	21.50	0619	0620	CARNEGIE
4720	WAYOUT	37	44.20	80	21.50	0706	0707	CARNEGIE
4722	WAYOUT	37	50.48	80	42.24	0627	0628	CARNEGIE
4724	BLWV	37	47.93	81	18.60	0612	0719	AFTAC

STATION NO	NAME	LATITUDE DEG	MIN	LONGITUDE DEG	MIN	OCCUPIED FROM	TO	OPERATOR
4728	WAYOUT	37	50.54	81	56.28	0623	0624	CARNEGIE
4734	WAYOUT	37	26.24	80	47.18	0612	0613	CARNEGIE
4734	WAYOUT	37	26.24	80	47.18	0619	0620	CARNEGIE
4736	WAYOUT	37	25.83	81	6.05	0622	0623	CARNEGIE
4738	WAYOUT	37	27.78	81	32.34	0621	0622	CARNEGIE
4742	WAYOUT	37	8.58	80	47.90	0620	0621	CARNEGIE
4742	WAYOUT	37	8.58	80	47.90	0629	0630	CARNEGIE
4812	STIMES	39	27.96	79	52.18	0717	0718	CARNEGIE
4820	ZULU	39	9.83	80	17.85	0619	0620	CARNEGIE
4822	STIMES	39	9.71	79	49.37	0716	0717	CARNEGIE
4824	STIMES	39	5.71	79	26.50	0718	0719	CARNEGIE
4832	XECKS	38	48.90	80	17.10	0712	0713	CARNEGIE
4834	XECKS	38	48.00	79	52.50	0711	0712	CARNEGIE
4840	XECKS	38	26.00	80	20.60	0707	0708	CARNEGIE
4842	XECKS	38	26.18	79	54.43	0710	0711	CARNEGIE
4906	GS129	40	31.30	78	49.10	0713	0714	CARNEGIE
4918	GS129	40	9.35	78	23.92	0717	0718	CARNEGIE
4924	BRPA	39	55.45	78	50.68	0612	0719	AFTAC
4928	GS129	39	42.92	78	1.37	0718	0719	CARNEGIE
4932	GS134	39	27.10	78	56.63	0707	0708	CARNEGIE
4934	GS129	39	24.08	78	31.73	0707	0708	CARNEGIE
4936	GS134	39	23.55	78	5.68	0706	0707	CARNEGIE
4938	WAYOUT	39	4.80	79	2.22	0713	0714	CARNEGIE
4940	GS129	39	3.69	78	34.94	0706	0707	CARNEGIE
4946	GS152	39	12.45	78	13.00	0706	0707	CARNEGIE
5002	GS129	40	59.07	78	22.10	0716	0717	CARNEGIE
5010	GS114	40	40.44	76	36.93	0712	0713	CARNEGIE
5028	GS114	40	15.77	76	16.79	0716	0717	CARNEGIE
5038	GS114	40	0.84	77	8.74	0717	0718	CARNEGIE
5040	GS130	40	7.24	76	55.70	0716	0717	CARNEGIE
5046	GS114	39	42.38	77	39.89	0706	0707	CARNEGIE
5046	GS114	39	42.38	77	39.89	0718	0719	CARNEGIE
5048	GS130	39	39.85	77	11.83	0717	0719	CARNEGIE
5052	GS108	39	33.37	76	24.23	0706	0707	[illegible]
5054	GS144	39	21.35	77	38.33	0706	070[illegible]	[illegible]
5056	CLFARM	39	18.32	77	22.56	0619	0630	CARNEGIE
5056	CLFARM	39	18.32	77	22.56	0706	0719	CARNEGIE
5058	GS108	39	13.90	76	50.05	0707	0708	CARNEGIE
5066	DELTA	39	16.49	77	9.18	0718	0719	CARNEGIE
5122	STIMES	38	27.73	75	38.54	0628	0629	CARNEGIE
5130	STIMES	37	58.36	75	35.04	0627	0628	CARNEGIE
5202	DELTA	39	7.25	77	9.17	0619	0620	CARNEGIE
5202	DELTA	39	7.25	77	9.17	0710	0712	CARNEGIE
5202	DELTA	39	7.25	77	9.17	0713	0714	CARNEGIE
5202	DELTA	39	7.25	77	9.17	0716	0717	CARNEGIE
5202	STIMES	39	7.25	77	9.17	0711	0712	CARNEGIE
5204	STIMES	38	58.87	77	21.77	0707	0708	CARNEGIE
5208	STIMES	38	45.52	76	44.85	0713	0714	CARNEGIE
5210	STIMES	38	22.08	76	28.00	0629	0630	CARNEGIE
5216	STIMES	38	51.95	77	41.20	0620	0621	CARNEGIE
5220	DELTA	39	4.38	77	8.57	0711	0714	CARNEGIE
5302	OHNY	42	14.65	74	53.30	0612	0719	AFTAC
5304	CPO	35	35.68	85	34.22	0612	0719	AFTAC
6001	HOTEL	35	58.28	81	36.41	0624	0628	USGS
6002	INDIA	36	08.23	82	21.13	0624	0628	USGS
6003	JULIET	36	25.15	82	57.15	0624	0628	USGS
6004	KILO	36	37.95	83	51.61	0624	0628	USGS
6005	LIMA	34	31.27	77	42.11	0624	0628	USGS

STATION NO	NAME	LATITUDE DEG	MIN	LONGITUDE DEG	MIN	OCCUPIED FROM	TO	OPERATOR
6006	PAPA	36	55.20	84	25.32	0624	0628	USGS
6007	QUEBEC	34	53.50	78	23.73	0624	0628	USGS
6008	ROMEO	35	08.04	79	14.43	0624	0628	USGS
6009	SIERRA	35	22.08	80	00.06	0624	0628	USGS
6010	TANGO	35	41.36	80	44.38	0624	0628	USGS
*6011	KINGSE	38	03.72	75	40.84	0706	0719	USGS
*6016	KINGSW	38	04.32	75	42.25	0706	0719	USGS
*6031	MORGAE	38	21.89	76	39.02	0706	0714	USGS
*6036	MORGAW	38	22.43	76	40.31	0706	0714	USGS
*6041	NEWMAE	38	26.59	76	48.03	0706	0713	USGS
*6046	NEWMAW	38	27.18	76	49.11	0706	0713	USGS
*6051	NEWTOE	38	29.96	76	56.64	0706	0708	USGS
*6051	DENTSE	38	27.52	76	52.72	0711	0719	USGS
*6056	NEWTOW	38	29.95	76	58.08	0706	0708	USGS
*6056	DENTSW	38	28.64	76	53.27	0711	0719	USGS
*6061	ANTIOE	38	51.60	77	41.30	0706	0713	USGS
*6066	ANTIOW	38	52.24	77	42.81	0706	0713	USGS
*6071	ZULLAE	38	54.17	77	47.53	0706	0714	USGS
*6076	ZULLAW	38	54.59	77	49.11	0706	0714	USGS
*6081	UPPERE	38	57.66	77	54.65	0706	0714	USGS
*6086	UPPERW	38	58.50	77	55.77	0706	0714	USGS
*6091	FAWCLE	39	07.85	78	18.19	0706	0712	USGS
*6091	FAWCEE	39	07.98	78	18.18	0712	0719	USGS
*6096	FAWCLW	39	08.82	78	18.69	0706	0712	USGS
*6096	FAWCEW	39	08.82	78	18.69	0712	0719	USGS
*6101	DELRAE	39	12.98	78	35.19	0706	0714	USGS
*6106	DELRAW	39	13.54	78	36.52	0706	714	USGS
*6111	ROMNEE	39	17.05	78	51.22	0706	0719	USGS
*6116	ROMNEW	39	18.35	78	51.61	0706	0719	USGS
*6121	CEDARN	34	56.31	76	20.76	0716	0719	USGS
*6126	CEDARS	34	56.95	76	19.34	0716	0719	USGS

* END POINTS OF ARRAYS. STATION NUMBERS ENDING IN 2, 3, 4 OR 5 ARE INTERMEDIATE POINTS.

OBSERVERS

WISCONSIN: DON BEDNAREK, BRIAN LEWIS, JOE LAURENCE, RODOLFO ANZOLEAGA, JERRY MCADOW

SCASIGRC): A L HALES, ROD GREEN, C E HELSLEY, JOHN DOWLING, TERRY BACON, DAVID EDMUNDSON, HERB HOFF, JOE NATION, J B TONEY, LEE BACON, TOM GLADD

TULSA: CHARLES CONLEY, JAMES LAWSON

GA TECH: ERNEST KAARSBERG, H W STRALEY III, JOHN HUSTED, LEROY DORMAN, JOHN WILBANKS

PENN STATE: BEN HOWELL, RICHARD MERKEL

MICHIGAN: L A LEVERAULT, C F FROLICH, F J TANIS, R M TURPENING, J N BAUMLER, R A RANDAZZO, R F HAND, J HOFFMAN, H J BUGAJSKI, D E WILLIS

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TABLE II
RECORDING STATIONS AT SEA

STA NO	LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	OPERATOR
1332*	37	31.64	74	43.57	WISCONSIN
1333*	37	30.87	74	41.63	WISCONSIN
1334*	37	28.66	74	37.06	WISCONSIN
1336*	37	38.12	75	00.52	WISCONSIN
1356*	37	00.95	74	52.18	WISCONSIN
1359*	36	54.45	74	57.65	WISCONSIN
1362	37	43.0	74	27.1	WISCONSIN
1363	37	59.0	74	15.8	WISCONSIN
1365	38	22.2	74	03.0	WISCONSIN
1366	38	29.0	73	56.4	WISCONSIN
2301	33	24.0	77	15.0	SCAS(GRC)
2302	33	29.8	77	08.5	SCAS(GRC)
2304	33	54.4	76	38.8	SCAS(GRC)
2305	34	02.6	76	30.0	SCAS(GRC)
2306	34	18.3	76	12.0	SCAS(GRC)
2308	34	33.8	75	54.0	SCAS(GRC)
2311	34	12.5	76	34.0	SCAS(GRC)
2312	34	21.1	76	57.0	SCAS(GRC)
2313	34	23.9	77	03.5	SCAS(GRC)
2329*	37	44.60	75	14.60	SCAS(GRC)
2330	37	43.1	75	09.0	SCAS(GRC)
2335*	37	20.92	74	29.33	SCAS(GRC)
2342	36	38.9	72	52.8	SCAS(GRC)
2343	36	37.2	72	46.4	SCAS(GRC)
2346	36	56.3	73	25.7	SCAS(GRC)
2350	37	08.6	73	54.8	SCAS(GRC)
2353	37	17.6	74	13.2	SCAS(GRC)
2367	37	29.2	74	36.0	SCAS(GRC)

* LOCATION ACCURACY EQUIVALENT TO THAT OF LAND STATIONS

TABLE III
SHOTS AT SEA

SHOT NO	DATE	CHARGE LBS	HOUR E.S.T.	SEC	LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	WATER DEPTH FT
102	0619	2000	2207	57.92	34	24.08	76	05.52	157
103	0619	2000	2340	01.87	34	31.42	75	56.36	160
104	0620	2000	0117	01.49	34	39.07	75	48.84	152
105	0620	2000	0250	00.93	34	46.37	75	35.09	242
106	0620	20000	0451	01.72	34	54.08	75	29.08	222
107	0620	2000	2119	59.93	33	32.99	77	03.62	132
108[1]	0620	2000	2300	00.75	33	25.46	77	12.42	137
109	0621	2000	0040	02.20	33	17.18	77	21.81	117
111	0621	2000	0359	59.80	33	01.14	77	39.10	582
113	0621	2000	2050	01.36	33	35.87	77	01.20	127
114	0621	2000	2229	55.51	33	42.77	76	52.06	135
115	0622	2000	0010	02.69	33	50.46	76	43.32	
116	0622	2000	0150	01.83	33	58.47	76	34.47	
117	0622	2000	0330	01.65	34	04.92	76	25.70	
118	0622	2000	0510	00.41	34	14.22	76	16.37	97
119	0623	2000	2200	03.72	34	27.64	77	12.81	52
120	0623	2000	2259	59.66	34	25.86	77	08.29	62
121	0624	2000	0000	00.72	34	24.42	77	03.77	72
122	0624	2000	0100	01.15	34	22.38	77	00.00	82
123	0624	2000	0200	01.77	34	20.61	76	55.79	87
124	0624	2000	0300	00.67	34	18.81	76	51.26	92
125	0624	2000	0410	00.97	34	16.99	76	45.22	97
126	0624	2000	2100	00.97	34	02.78	76	06.75	1272
128	0625	2000	0055	00.12	33	51.21	75	35.89	9852
132	0625	2000	2059	59.77	34	28.26	77	14.32	47
133	0625	2000	2200	00.65	34	26.85	77	10.22	57
134	0625	2000	2300	00.48	34	24.98	77	05.99	67
135	0626	2000	0000	00.90	34	23.44	77	01.84	75
136	0626	2000	0100	00.52	34	21.71	76	57.69	80
137[3]	0626	2000	0200	00.82	34	20.10	76	53.53	92
138	0626	2000	0300	00.76	34	18.49	76	49.24	92
139	0626	20000	0520	00.70	34	16.89	76	45.17	95
140[4]	0627	2000	2100	00.71	34	14.67	76	40.23	98
141	0627	2000	2200	00.46	34	13.43	76	37.17	102
142	0627	2000	2300	00.42	34	11.97	76	33.34	102
143	0628	2000	0000	00.57	34	10.64	76	28.91	107
144[5]	0628	2000	0100	01.40	34	08.98	76	24.87	112
145	0628	2000	0200	00.86	34	07.69	76	20.50	132
146	0628	2000	0300	01.21	34	06.22	76	16.60	162
147	0628	2000	0520	00.87	34	04.40	76	14.59	337
149	0628	2000	2310	00.39	33	35.56	74	55.72	12000
150	0629	2000	0040	00.88	33	31.08	74	43.75	12900
151	0629	2000	0230	00.67	33	26.53	74	31.81	13560
153	0629	2000	2300	00.64	33	53.74	75	45.17	5100
154	0630	2000	0015	00.68	33	50.22	75	35.14	9660
156	0630	2000	0815	00.67	33	22.42	74	21.88	14100

TABLE III
SHOTS AT SEA

SHOT NO	DATE	CHARGE LBS	HOUR SEC E.S.T.	LATITUDE DEG MIN	LONGITUDE DEG MIN	WATER DEPTH FT
303	0706	2000	2300 00.59	37 45.98	75 15.75	65
304	0707	2000	0000 00.39	37 43.59	75 10.84	72
305	0707	2000	0100 00.56	37 41.85	75 07.07	102
306	0707	2000	0200 00.99	37 39.98	75 02.67	100
307	0707	2000	0300 00.36	37 38.24	74 58.78	108
308	0707	10000	0430 00.68	37 36.32	74 53.57	108
309	0707	2000	2100 00.41	37 39.60	75 01.38	102
310	0707	2000	2200 00.42	37 37.37	74 56.74	95
311	0707	2000	2300 00.56	37 34.91	74 53.27	124
312	0708	2000	0000 00.58	37 33.49	74 48.07	132
313	0708	2000	0100 00.56	37 31.83	74 43.79	158
314	0708	2000	0200 00.37	37 29.48	74 39.96	187
315	0708	2000	0300 00.50	37 27.85	74 35.89	195
316	0708	10000	0430 00.63	37 25.80	74 31.40	307
320	0711	2000	0240 00.72	37 22.20	74 24.20	1920
322	0711	2000	2115 00.59	36 47.72	73 08.60	10200
323	0711	2000	2300 00.01	36 41.37	72 57.27	10800
324	0712	2000	0045 00.80	36 36.57	72 44.22	11460
326	0712	10000	0450 00.58	36 27.17	72 18.30	12240
327	0712	2000	2300 00.44	36 34.06	72 38.10	11400
328	0713	2000	0000 00.54	36 36.70	72 44.45	11400
329	0713	2000	0300 00.36	36 51.11	73 16.63	9690
330	0713	10000	0430 00.68	36 55.06	73 22.49	9480
331	0713	2000	1800 00.84	36 56.16	73 27.45	9300
332	0713	2000	1930 00.67	36 56.13	73 28.00	9300
333	0713	2000	2200 00.61	37 02.18	73 41.56	8700
334	0713	2000	2329 54.07	37 08.33	73 54.89	7200
335	0714	2000	0100 00.43	37 14.34	74 07.42	5400
336[6]	0714	2000	0200 00.90	37 17.66	74 13.50	4500
337	0714	2000	0300 00.51	37 20.27	74 20.64	3090
338	0716	2000	2120 00.43	37 12.08	74 47.66	131
340	0717	2000	0030 00.76	36 51.83	74 59.36	120
341[7]	0717	2000	0205 01.26	36 42.05	75 05.14	97
342	0717	2000	0340 00.40	36 31.74	75 11.23	137
343	0717	10000	0450 00.64	36 31.63	75 11.72	120
344[8]	0717	10000	2030 00.63	38 03.02	74 12.23	215
345[8]	0717	2000	2205 00.67	38 13.51	74 08.97	222
346	0717	2000	2340 00.56	38 24.93	74 04.78	200
347[8]	0718	2000	0115 00.52	38 31.35	73 55.33	177
348[8]	0718	2000	0249 59.83	38 42.40	73 48.00	167
349	0718	10000	0450 00.91	38 49.18	73 41.79	175
250	0718	2000	2055 00.66	38 01.21	74 15.28	205
353[8]	0719	2000	0140 00.64	37 50.60	74 19.33	242
354[8]	0719	2000	0315 00.59	37 36.99	74 27.83	137
355[8]	0719	10000	0450 01.40	37 27.11	74 33.63	230
356[9]	0719	2000+	0920 00.10	37 31.80	75 21.70	54
801[10]	0715		0916 08.10	37 11.84	74 21.14	

TABLE III

Notes on Sea Shots

In general shot times are accurate to 0.02 sec; locations accurate to ±0.2 km relative to land for shots 102-156, ±0.3 km for shots 303-356. Relative accuracy between shots is greater.

1. **LORAN** C position not well determined. Limits of error ±2 km. Waterwave information for this shot inadequate for independent location.
2. Shot time determined from water wave arrival at nearby buoys. Limits of error estimated to be ±0.05 sec.
3. Shot time determined from water wave arrival at nearby buoys. Limits of error estimated to be ±0.10 sec.
4. Position determined by water wave travel time to nearby buoys. Limits of error along line ±0.1 km; perpendicular to line ±2 km.
5. Did not detonate at time indicated by firing pulse. Shot time determined from water wave arrivals at ship and nearby buoy. Limits of error ±0.05 sec.
6. Shot time determined from water wave arrivals at nearby buoys on both sides of shot. Time accurate to ±0.5 sec.
7. Shot time determined from water wave arrival at buoys on one side of the shot. Time accurate to ±0.1 sec.
8. Shots not located by LORAN C. Positions given are estimated from water waves and LORAN A data. Locations of 344, 345, 347 and 348 are accurate to 0.2 km along shooting line and 1.5 km perpendicular to lines. Locations of 353 and 354 along line accurate to 0.5 km, perpendicular to line to 3 km. Location of 355 along line accurate to 0.5 km, perpendicular line to 1 km.
9. Shot time determined from water arrival at ship and estimated length of firing cable. Estimate accurate to ±0.2 sec. Location determined from position of wreck as given on Coast Guard chart.
10. Chase III shot. Charge size equivalent to 700 tons TNT.

TABLE IV
SHOTS ON LAND AND IN CHESAPEAKE BAY AREA

SHOT NO	DATE	CHARGE LBS	HOUR E.S.T.	SEC	LATITUDE DEG	LATITUDE MIN	LONGITUDE DEG	LONGITUDE MIN	ELEV FT
601	0630	2000	0400	00.63	37	45.13	78	43.90	
602	0630	2000	0630	00.68	37	45.13	78	43.90	
603	0706	2000	2130	00.67	38	20.15	76	18.45	
604	0706	2000	2230	01.45	38	20.60	76	18.50	
605	0707	2000	0400	00.54	37	45.13	78	43.90	
606	0707	2000	0630	00.50	37	45.13	78	43.90	
607	0708	2000	0230	00.90	38	22.80	76	31.25	
608	0708	2000	0330	00.66	38	22.80	76	31.25	
701	0612	6000	0530	00.04	34	34.13	83	51.42	1370
702	0612	6000	0559	59.98	36	36.88	87	38.28	595
703	0612	2000	0630	00.39	36	02.07	85	52..4	660
704	0612	1920	0700	00.49	35	12.94	85	06.01	685
705	0613	10000	0600	00.11	36	36.88	87	38.28	595
706	0613	1200	0630	00.04	34	34.13	83	51.42	1370
707	0616	2000	0630	00.29	36	36.88	87	38.28	595
708	0616	5940	0700	00.15	35	12.94	85	06.01	685
709	0616	6000	0730	00.22	36	02.07	85	52.44	660
710	0616	10000	1330	00.12	34	34.13	93	51.42	1370
711	0619	10000	0530	00.04	34	34.13	83	51.42	1370
712	0620	2100	0530	00.19	36	55.19	84	25.32	800
713	0620	3900	0600	00.64	35	24.59	86	04.48	1105
714	0620	9000	0730	00.04	34	21.92	87	10.80	660
715	0622	7800	0530	00.64	36	54.50	84	34.45	955
716	0622	6000	0600	00.18	36	04.58	84	54.87	1640
717	0622	2000	0630	00.06	34	21.92	87	10.80	660
718	0623	2100	0530	00.57	36	55.19	84	25.32	800
719	0623	6000	0600	00.09	34	21.92	87	10.80	660
720	0623	2000	0630	00.07	36	04.58	84	54.87	1640
721	0623	6000	0700	00.08	35	24.59	86	04.48	
722	0628	8000	0559	59.83	36	09.42	82	19.61	2475
723	0629	8580	0600	00.05	36	55.19	84	25.32	800
724	0629	6000	0629	59.93	35	24.47	80	01.58	340
725	0630	1740	0530	00.12	36	55.19	84	25.32	800
726	0630		0600	00.27	35	24.47	80	01.58	340
727	0630	2000	0700	00.11	36	09.42	82	19.61	2475
728	0702	10020	0530	00.68	34	32.10	77	42.83	30
729	0702	2000	0630	00.28	35	24.47	80	01.58	340
730	0722	1200	0530	00.16	34	20.99	83	52.34	1100
731	0723	8010	0530	00.16	34	20.99	83	52.34	1100

TABLE V
Travel Times

SOUTHERN P ILES: SEA STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
2301	GRCSEA	113	7	29.980	0	6.26	1		
2301	GRCSEA	114	7	49.070	0	9.59	1		
2301	GRCSEA	115	9	68.580	0	13.08	1		
2301	GRCSEA	117	9	106.300	0	19.30	1		
2301	GRCSEA	118	9	129.410	0	22.94	1		
2301	GRCSEA	227	7	32.180	0	6.55	1		
2301	GRCSEA	228	7	35.020	0	7.18	1		
2301	GRCSEA	229	7	40.000	0	8.25	1		
2301	GRCSEA	230	7	44.280	0	8.48	1		
2302	GRCSEA	107	7	9.510	0	3.10	1		
2302	GRCSEA	108	7	10.740	0	3.17	1		
2302	GRCSEA	113	7	15.670	0	4.19	1		
2302	GRCSEA	114	7	34.760	0	7.49	1		
2302	GRCSEA	115	9	54.270	0	10.85	1		
2302	GRCSEA	217	7	3.250	0	1.92	1		
2302	GRCSEA	227	7	[illegible]	0	4.49	1		
2304	GRCSEA	115	7	10.260	0	3.17	1		
2304	GRCSEA	116	7	8.050	0	3.08	1		
2304	GRCSEA	117	7	27.460	0	7.95	1		
2304	GRCSEA	231	7	6.810	0	2.12	1		
2304	GRCSEA	234	7	5.030	0	2.35	1		
2305	GRCSEA	114	7	48.980	0	10.39	1		
2305	GRCSEA	115	7	29.470	0	7.07	1		
2305	GRCSEA	116	7	11.160	0	3.59	1		
2305	GRCSEA	117	7	8.250	0	2.92	1		
2305	GRCSEA	118	7	31.360	0	6.62	1		
2305	GRCSEA	231	7	26.020	0	6.15	1		
2305	GRCSEA	235	7	4.420	0	2.03	1		
2305	GRCSEA	236	7	0.720	0	0.28	1		
2305	GRCSEA	237	7	0.410	0	0.21	1		
2305	GRCSEA	238	7	2.260	0	1.01	1		
2305	GRCSEA	239	7	10.960	0	3.45	1		
2306	GRCSEA	102	7	14.850	0	4.38	1		
2306	GRCSEA	103	7	34.280	0	7.85	1		
2306	GRCSEA	115	9	70.370	0	13.55	1		
2306	GRCSEA	116	7	52.060	0	10.22	1		
2306	GRCSEA	117	9	32.150	0	7.03	1		
2306	GRCSEA	231	9	66.920	0	12.59	1		
2308	GRCSEA	103	7	4.510	0	2.43	1		
2308	GRCSEA	104	7	13.880	0	4.53	1		
2308	GRCSEA	202	9	11.130	0	3.96	1		
2308	GRCSEA	205	7	8.260	0	3.14	1		
2308	GRCSEA	206	7	12.240	0	4.19	1		
2311	GRCSEA	139	9	18.710	0	4.53	1		
2311	GRCSEA	140	7	11.250	0	3.11	1		
2311	GRCSEA	141	7	4.970	0	2.12	1		
2311	GRCSEA	142	9	1.560	0	0.90	1		
2311	GRCSEA	143	7	8.540	0	3.10	1		
2311	GRCSEA	144	7	15.510	0	4.40	1		
2311	GRCSEA	145	7	22.660	0	5.59	1		

SOUTHERN PROFILES: SEA STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
2311	GRCSEA	146	7	29.200	0	6.73	1		
2311	GRCSEA	147	7	33.470	0	7.41	1		
2311	GRCSEA	249	9	5.670	0	2.39	1		
2311	GRCSEA	251	7	6.730	0	2.58	1		
2311	GRCSEA	252	7	12.880	0	3.81	1		
2311	GRCSEA	253	7	20.630	0	5.22	1		
2312	GRCSEA	120	7	20.250	0	4.28	1		
2312	GRCSEA	121	9	13.020	0	3.04	1		
2312	GRCSEA	122	9	5.210	0	1.83	1		
2312	GRCSEA	124	9	8.870	0	2.55	1		
2312	GRCSEA	125	9	19.000	0	4.30	1		
2312	GRCSEA	133	9	23.880	0	4.75	1		
2312	GRCSEA	134	7	16.490	0	3.59	1		
2312	GRCSEA	135	7	9.350	0	2.48	1		
2312	GRCSEA	136	9	2.390	0	1.25	1		
2312	GRCSEA	137	7	4.700	0	1.84	1		
2312	GRCSEA	138	7	12.100	0	3.09	1		
2312	GRCSEA	139	9	19.170	0	4.31	1		
2312	GRCSEA	140	9	26.630	0	5.86	1		
2312	GRCSEA	141	9	32.910	0	6.74	1		
2312	GRCSEA	142	9	39.440	0	7.88	1		
2312	GRCSEA	143	9	46.420	0	9.10	1		
2312	GRCSEA	144	9	53.390	0	10.33	1		
2312	GRCSEA	145	9	60.540	0	11.54	1		
2312	GRCSEA	146	9	67.080	0	12.57	1		
2312	GRCSEA	147	9	71.350	0	13.25	1		
2312	GRCSEA	243	9	20.220	0	4.20	1		
2312	GRCSEA	246	7	1.950	0	1.09	1		
2312	GRCSEA	247	7	9.110	0	2.70	1		
2312	GRCSEA	248	7	14.980	0	3.65	1		
2313	GRCSEA	119	7	15.120	0	3.20	1		
2313	GRCSEA	120	9	7.810	0	2.04	1		
2313	GRCSEA	122	7	7.230	0	1.97	1		
2313	GRCSEA	123	7	13.580	0	3.15	1		
2313	GRCSEA	124	7	21.310	0	4.47	1		
2313	GRCSEA	125	7	31.440	0	6.40	1		
2313	GRCSEA	132	9	17.710	0	3.68	1		
2313	GRCSEA	133	9	11.440	0	2.61	1		
2313	GRCSEA	134	9	4.050	0	1.43	1		
2313	GRCSEA	135	9	3.090	0	1.32	1		
2313	GRCSEA	243	9	7.780	0	2.06	1		
2326	GRCSEA	153	7	79.750	0	19.04	1		
2326	GRCSEA	154	7	65.470	0	18.19	1		
2326	GRCSEA	156	7	45.880	0	15.71	1		
2326	GRCSEA	257	7	67.380	0	21.03	1		
2326	GRCSEA	259	7	57.250	0	16.45	1		
2326	GRCSEA	261	7	49.390	0	16.05	1		
2326	GRCSEA	262	7	45.790	0	15.48	1		
2326	GRCSEA	264	7	42.120	0	15.16	1		
2326	GRCSEA	265	7	38.350	0	14.56	1		

SOUTHERN PROFILES: SEA STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
2326	GRCSEA	267	7	32.850	0	13.88	1		
2326	GRCSEA	268	7	31.240	0	13.56	1		
2326	GRCSEA	270	7	27.360	0	13.08	1		
2326	GRCSEA	271	7	23.610	0	12.41	1		
2326	GRCSEA	272	7	19.980	0	11.54	1		
2326	GRCSEA	273	7	18.360	0	11.36	1		
2326	GRCSEA	287	7	17.760	0	11.33	1		
2326	GRCSEA	290	7	21.220	0	12.00	1		
2326	GRCSEA	291	7	25.000	0	12.62	1		
2326	GRCSEA	292	7	28.800	0	13.24	1		
2326	GRCSEA	293	7	32.680	0	13.74	1		
2326	GRCSEA	295	7	42.180	0	15.15	1		
2326	GRCSEA	296	7	45.780	0	15.68	1		

SOUTHERN PROFILES: LAND STATIONS

STATION NO	STATION NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1101	TIGER	102	8	149.659	0	25.00	1		
1101	TIGER	103	8	162.452	0		1		NO RECORD
1101	TIGER	104	8	173.958	0	28.71	1		
1101	TIGER	105	8	195.885	0		1		NO RECORD
1101	TIGER	106	8	206.889	0	32.32	1		
1101	TIGER	107	8	128.176	0	21.90	1		
1101	TIGER	108	8	135.447	0	23.35	1		
1101	TIGER	109	8	146.111	0	24.50	1		
1101	TIGER	111	8	172.323	0		1		NO RECORD
1101	TIGER	113	8	125.329	0	21.76	1	6.49	
1101	TIGER	114	8	122.839	0	21.18	1	6.34	
1101	TIGER	115	8	121.792	0	20.96	1	6.52	
1101	TIGER	116	8	123.654	0	21.36	1		
1101	TIGER	117	8	129.717	0	22.27	1		
1101	TIGER	118	8	137.104	0	23.36	1	6.94	
1101	TIGER	119	8	47.068	0	8.22	1	6.29	
1101	TIGER	120	8	54.632	0	9.47	1	6.56	
1101	TIGER	121	8	62.034	0	10.74	1	6.34	
1101	TIGER	122	8	68.700	0	12.15	1	5.88	
1101	TIGER	123	8	75.875	0	13.75	1		
1101	TIGER	124	8	83.543	0	14.41	1	6.76	
1101	TIGER	125	8	93.402	0	16.14	1	6.57	
1101	TIGER	126	8	158.029	0	26.59	1	7.85	
1101	TIGER	128	8	210.143	0	33.78	1	8.01	
1101	TIGER	132	8	44.538	0	7.93	1	6.63	
1101	TIGER	133	8	51.281	0	8.93	1	[illegible]21	
1101	TIGER	134	8	58.478	0	10.07	1	5.94	
1101	TIGER	135	8	65.403	0	11.29	1	6.05	
1101	TIGER	136	8	72.452	0	12.72	1	6.12	
1101	TIGER	137	8	79.456	0	13.71	1		
1101	TIGER	138	8	86.656	0	14.94	1	6.29	
1101	TIGER	139	8	93.539	0		1		NO RECORD
1101	TIGER	140	8	102.085	0	17.70	1	5.92	
1101	TIGER	141	8	107.295	0	18.43	1	6.64	
1101	TIGER	142	8	113.758	0	19.61	1	6.61	
1101	TIGER	143	8	120.992	0	20.84	1	6.55	
1101	TIGER	144	8	127.895	0	21.97	1		
1101	TIGER	145	8	135.019	0	23.22	1		
1101	TIGER	146	8	141.596	0	23.97	1		
1101	TIGER	147	8	145.734	0	24.70	1	6.54	
1101	TIGER	149	8	278.581	0	48.10	1		POSSIBLY EARLIER
1101	TIGER	150	8	298.875	0	46.76	1		
1101	TIGER	151	8	319.193	0	49.60	1		S/N POOR
1101	TIGER	153	8	195.142	0	30.84	1	8.53	
1101	TIGER	154	8	211.924	0	33.60	1	8.95	
1101	TIGER	156	8	336.349	0	52.09	1		
1102	GAMMA	102	8	166.448	0		1		NO RECORD
1102	GAMMA	103	8	178.552	0	28.71	1	6.78	
1102	GAMMA	104	8	189.327	0	30.17	1	8.96	
1102	GAMMA	105	8	210.600	0	32.67	1	8.55	

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1102	GAMMA	106	8	220.909	0	33.85	1	7.99	
1102	GAMMA	107	8	143.835	0	24.35	1	5.76	
1102	GAMMA	108	8	149.777	0	25.47	1	6.23	
1102	GAMMA	109	8	158.929	0	26.23	1	9.63	
1102	GAMMA	111	8	182.485	0	29.26	1	10.03	
1102	GAMMA	113	8	141.373	0		1		NO RECORD
1102	GAMMA	114	8	139.914	0	23.88	1	6.12	
1102	GAMMA	115	8	139.570	0	23.85	1	5.81	
1102	GAMMA	116	8	141.738	0	23.91	1	6.89	
1102	GAMMA	117	8	147.736	0	24.90	1	8.13	
1102	GAMMA	118	8	154.678	0		1		NO RECORD
1102	GAMMA	119	8	64.721	0	11.18	1	5.89	
1102	GAMMA	120	8	72.350	0	12.32	1	6.16	
1102	GAMMA	121	8	79.769	0	13.62	1	6.07	
1102	GAMMA	122	8	86.510	0	14.86	1	5.95	
1102	GAMMA	123	8	93.716	0	16.59	1	6.10	
1102	GAMMA	124	8	101.405	0	17.28	1	6.36	
1102	GAMMA	125	8	111.258	0	18.96	1	6.18	
1102	GAMMA	126	8	175.934	0	28.76	1	8.24	
1102	GAMMA	128	8	228.064	0	36.04	1	9.62	
1102	GAMMA	132	8	62.160	0	10.80	1	6.20	
1102	GAMMA	133	8	68.948	0	11.81	1	6.07	
1102	GAMMA	134	8	76.219	0	13.00	1	6.07	
1102	GAMMA	135	8	83.174	0	14.16	1	6.21	
1102	GAMMA	136	8	90.260	0	15.48	1	6.04	
1102	GAMMA	137	8	97.285	0	16.58	1	6.03	
1102	GAMMA	138	8	104.500	0	17.80	1	6.26	
1102	GAMMA	139	8	111.398	0		1		NO RECORD
1102	GAMMA	140	8	119.972	0	20.39	1	6.33	
1102	GAMMA	141	8	125.191	0	21.26	1	6.08	
1102	GAMMA	142	8	131.660	0		1		NO RECORD
1102	GAMMA	143	8	138.888	0	23.55	1	6.22	
1102	GAMMA	144	8	145.801	0	24.60	1	9.57	
1102	GAMMA	145	8	152.918	0	25.44	1	8.44	
1102	GAMMA	146	8	159.500	0	26.35	1	8.27	
1102	GAMMA	147	8	163.669	0	27.00	1		
1102	GAMMA	149	8	296.518	0	48.17	1	8.84	
1102	GAMMA	150	8	316.812	0	48.87	1	8.79	
1102	GAMMA	151	8	337.132	0	51.59	1	8.78	
1102	GAMMA	153	8	213.079	0	33.10	1	8.08	
1102	GAMMA	154	8	229.858	0	35.82	1	8.68	
1102	GAMMA	156	8	354.292	0	55.08	1		
1103	HOTEL	102	8	199.740	0		1		NO RECORD
1103	HOTEL	103	8	210.599	0	33.09	1		
1103	HOTEL	104	8	220.048	0		1		NO RECORD
1103	HOTEL	105	8	240.041	0	36.57	1		
1103	HOTEL	106	8	249.051	0	37.18	1		
1103	HOTEL	107	8	177.085	0	29.07	1		
1103	HOTEL	108	8	181.234	0	29.56	1		
1103	HOTEL	109	8	188.176	0	30.29	1		

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1103	HOTEL	111	8	207.414	0	32.48	1		
1103	HOTEL	113	8	141.122	0	28.80	1		
1103	HOTEL	114	8	174.898	0	28.39	1		
1103	HOTEL	115	8	175.289	0	28.28	1		
1103	HOTEL	116	8	177.630	0	29.73	1		MAY NOT BE FIRST
1103	HOTEL	117	8	183.333	0	29.52	1		
1103	HOTEL	118	8	189.387	0	30.56	1		
1103	HOTEL	119	8	99.909	0	16.84	1		
1103	HOTEL	120	8	107.574	0	17.99	1		
1103	HOTEL	121	8	114.980	0	19.28	1		
1103	HOTEL	122	8	121.806	0	20.60	1		
1103	HOTEL	123	8	129.040	0	22.34	1		
1103	HOTEL	124	8	136.744	0	23.03	1		
1103	HOTEL	125	8	146.565	0	24.70	1		
1103	HOTEL	126	8	211.254	0		1		S/N POOR
1103	HOTEL	128	8	263.386	0		1		S/N POOR
1103	HOTEL	132	8	97.330	0	16.44	1		
1103	HOTEL	133	8	104.125	0	17.49	1		
1103	HOTEL	134	8	111.456	0	18.68	1		
1103	HOTEL	135	8	118.424	0	19.90	1		
1103	HOTEL	136	8	125.540	0	21.10	1		
1103	HOTEL	137	8	132.580	0	22.31	1		
1103	HOTEL	138	8	139.803	0	23.51	1		
1103	HOTEL	139	8	146.713	0	24.68	1		
1103	HOTEL	140	8	155.321	0	26.08	1		
1103	HOTEL	141	8	160.549	0	26.91	1		
1103	HOTEL	142	8	167.021	0	27.66	1		
1103	HOTEL	143	8	174.227	0	28.58	1		
1103	HOTEL	144	8	181.151	0	29.33	1		
1103	HOTEL	145	8	188.247	0	30.02	1		
1103	HOTEL	146	8	194.831	0	31.20	1		
1103	HOTEL	147	8	199.063	0	31.90	1		
1103	HOTEL	149	8	331.853	0		1		S/N POOR
1103	HOTEL	150	8	352.142	0		1		S/N POOR
1103	HOTEL	151	8	372.459	0		1		S/N POOR
1103	HOTEL	153	8	248.446	0	38.40	1		
1103	HOTEL	154	8	265.211	0	40.82	1		
1103	HOTEL	156	8	389.626	0		1		NO RECORD
1104	CHARLY	102	8	216.815	0		1		NO RECORD
1104	CHARLY	103	8	227.582	0	35.09	1		
1104	CHARLY	104	8	236.859	0	36.04	1		
1104	CHARLY	105	8	256.624	0	38.33	1		
1104	CHARLY	106	8	265.373	0	39.36	1		
1104	CHARLY	107	8	190.862	0	30.69	1		
1104	CHARLY	108	8	193.897	0		1		NO RECORD
1104	CHARLY	109	8	199.556	0	31.96	1		
1104	CHARLY	111	8	216.378	0	33.90	1		
1104	CHARLY	113	8	189.236	0	30.56	1		
1104	CHARLY	114	8	189.940	0	30.35	1		
1104	CHARLY	115	8	191.112	0	30.43	1		

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1104	CHARLY	116	8	194.057	0	31.05	1		QUESTIONABLE
1104	CHARLY	117	8	200.116	0	31.48	1		
1104	CHARLY	118	8	206.420	0	32.50	1		
1104	CHARLY	119	8	116.822	0	19.63	1		
1104	CHARLY	120	8	124.483	0	20.75	1		
1104	CHARLY	121	8	131.896	0	21.99	1		
1104	CHARLY	122	8	138.701	0	23.27	1		
1104	CHARLY	123	8	145.929	0	24.99	1		
1104	CHARLY	124	8	153.631	0	25.64	1		
1104	CHARLY	125	8	163.466	0	27.20	1		
1104	CHARLY	126	8	228.162	0	35.53	1		
1104	CHARLY	128	8	280.299	0		1		S/N POOR
1104	CHARLY	132	8	114.245	0	19.15	1		
1104	CHARLY	133	8	121.043	0	20.19	1		
1104	CHARLY	134	8	128.363	0	21.38	1		
1104	CHARLY	135	8	135.331	0	22.53	1		
1104	CHARLY	136	8	142.442	0	23.69	1		
1104	CHARLY	137	8	149.480	0	24.95	1		
1104	CHARLY	138	8	156.702	0	26.15	1		
1104	CHARLY	139	8	163.611	0	27.18	1		
1104	CHARLY	140	8	172.210	0	28.32	1		
1104	CHARLY	141	8	177.493	0	28.91	1		
1104	CHARLY	142	8	183.909	0	29.70	1		
1104	CHARLY	143	8	191.123	0	30.56	1		
1104	CHARLY	144	8	198.045	0	31.32	1		
1104	CHARLY	145	8	205.149	0	31.73	1		
1104	CHARLY	146	8	211.733	0	33.07	1		
1104	CHARLY	147	8	215.943	0	33.56	1		
1104	CHARLY	149	8	348.766	0	55.11	1		QUESTIONABLE
1104	CHARLY	150	8	369.057	0	55.38	1		
1104	CHARLY	151	8	389.376	0	57.35	1		
1104	CHARLY	153	8	265.342	0	40.08	1		
1104	CHARLY	154	8	281.113	0	42.77	1		
1104	CHARLY	156	8	406.541	0		1		S/N POOR
SOUTHWEST CENTER FOR ADVANCED STUDIES (GRADUATE RESEARCH CENTER)									
2105	HLR-3E	102	9	135.500	0	22.84	1	6.20	GOOD ONSET
2100	HLR-8E	104	9	158.650	0	26.39	1	6.30	WEAK SIGNAL
2100	HLR-8E	105	9	180.610	0	28.97	1	5.60	GOOD ONSET
2100	HLR-8E	107	9	122.430	0	20.96	1	6.10	GOOD ONSET
2100	HLR-8E	108	9	131.700	0	22.87	1	5.60	GOOD ONSET
2100	HLR-8E	109	9	144.260	0	24.14	1	5.50	GOOD ONSET
2100	HLR-8E	111	9	173.270	0	28.30	1		GOOD ONSET
2105	HLR-3E	113	9	119.730	0	20.91	1	6.10	GOOD ONSET
2100	HLR-8E	114	9	114.370	0	19.82	1	5.50	GOOD ONSET
2100	HLR-8E	115	9	111.330	0	19.26	1	6.00	GOOD ONSET
2100	HLR-8E	117	9	116.310	0	20.08	1	5.90	GOOD ONSET
2100	HLR-8E	118	9	122.640	0	21.18	1	6.20	GOOD ONSET
2100	HLR-8E	119	9	32.820	0	6.05	1	6.00	GOOD ONSET
2100	HLR-8E	120	9	40.440	0	7.24	1	5.80	GOOD ONSET
2100	HLR-8E	121	9	47.860	0	8.54	1	5.90	GOOD ONSET
2100	HLR-8E	122	9	54.670	0	9.82	1	5.80	GOOD ONSET

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
2105	HLR-3E	123	9	62.920	0	10.84	1	6.30	GOOD ONSET
2100	HLR-8E	124	9	69.620	0	12.22	1	5.80	GOOD ONSET
2100	HLR-8E	125	9	79.460	0	13.92	1	5.70	MODERATE AMPL
2100	HLR-8E	126	9	144.170	0	24.85	1	7.10	GOOD ONSET
2100	HLR-8E	132	9	30.210	0	5.60	1	6.10	GOOD ONSET
2100	HLR-8E	133	9	36.990	0	6.71	1	6.30	GOOD ONSET
2100	HLR-8E	134	9	44.330	0	7.87	1	5.70	GOOD ONSET
2100	HLR-8E	135	9	51.330	0	9.11	1	5.70	GOOD ONSET
2100	HLR-8E	136	9	58.450	0	10.28	1	5.90	GOOD ONSET
2100	HLR-8E	137	9	65.460	0	11.55	1	6.00	GOOD ONSET
2100	HLR-8E	138	9	72.690	0	12.71	1	5.60	GOOD ONSET
2100	HLR-8E	139	9	79.610	0	13.90	1	6.10	GOOD ONSET
2100	HLR-8E	140	9	88.220	0	15.34	1	5.70	MODERATE AMPL
2100	HLR-8E	141	9	93.460	0	16.20	1	5.80	WEAK SIGNAL
2100	HLR-8E	142	9	99.930	0	17.57	1	6.10	GOOD ONSET
2100	HLR-8E	143	9	107.130	0	18.61	1	6.10	GOOD ONSET
2100	HLR-8E	144	9	114.060	0	19.73	1	5.70	GOOD ONSET
2100	HLR-8E	145	9	121.160	0	20.77	1	6.10	MODERATE AMPL
2100	HLR-8E	146	9	127.730	0	21.91	1	6.20	WEAK SIGNAL
2100	HLR-8E	147	9	131.970	0	22.57	1	5.80	GOOD ONSET
2100	HLR-8E	728	9	16.490	0	3.15	1	4.20	GOOD ONSET
2120	SRFCTY	114	9	100.840	0	17.80	1		GOOD ONSET
2120	SRFCTY	115	9	99.910	0	17.75	1		NOISY
2120	SRFCTY	121	9	44.530	0	7.95	1		GOOD ONSET
2120	SRFCTY	124	9	64.900	0	11.50	1		GOOD ONSET
2120	SRFCTY	125	9	74.650	0	13.11	1		NOISY
2120	SRFCTY	126	9	138.680	0	24.14	1		MODERATE AMPL
2120	SRFCTY	134	9	41.130	0	7.27	1		MODERATE AMPL
2120	SRFCTY	135	9	47.590	0	8.39	1		GOOD ONSET
2120	SRFCTY	136	9	54.270	0	9.75	1		MODERATE AMPL
2120	SRFCTY	139	9	74.780	0	13.06	1		GOOD ONSET
2120	SRFCTY	142	9	94.610	0	16.46	1		MODERATE AMPL
2120	SRFCTY	144	9	108.660	0	18.79	1		GOOD ONSET
2130	SNOFRD	120	9	24.630	0	4.66	1		GOOD ONSET
2130	SNOFRD	122	9	38.910	0	7.15	1		GOOD ONSET
2130	SNOFRD	123	9	46.100	0	8.29	1		GOOD ONSET
2130	SNOFRD	124	9	53.820	0	9.57	1		GOOD ONSET
2130	SNOFRD	125	9	63.660	0	11.27	1		GOOD ONSET
2130	SNOFRD	126	9	128.360	0	22.71	1		MODERATE AMPL
2130	SNOFRD	128	9	180.510	0	31.26	1		WEAK SIGNAL
2130	SNOFRD	132	9	14.450	0	2.97	1		GOOD ONSET
2130	SNOFRD	133	9	21.250	0	4.10	1		GOOD ONSET
2130	SNOFRD	134	9	28.550	0	5.31	1		GOOD ONSET
2130	SNOFRD	135	9	35.520	0	6.53	1		GOOD ONSET
2130	SNOFRD	136	9	42.600	0	7.75	1		GOOD ONSET
2130	SNOFRD	137	9	49.650	0	8.95	1		GOOD ONSET
2130	SNOFRD	138	9	56.890	0	10.16	1		GOOD ONSET
2130	SNOFRD	139	9	63.810	0	11.38	1		GOOD ONSET
2130	SNOFRD	140	9	72.430	0	12.73	1		GOOD ONSET
2130	SNOFRD	141	9	77.630	0	13.65	1		NOISY

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
2130	SNDFRD	142	9	84.110	0	14.73	1		GOOD ONSET
2130	SNDFRD	144	9	98.240	0	17.98	1		WEAK SIGNAL
	UNIVERSITY OF TULSA								
3001	BRAGG	105	9	324.153	1	48.22	1		PN POOR
3001	BRAGG	105	9	324.153	1	53.73	0		POOR
3001	BRAGG	106	9	331.525	1	49.56	1		PN POOR
	BRAGG	106	9	331.525	1	54.42	0		POOR
	BRAGG	106	9	331.525	1	57.68	0		WEAK
	BRAGG	107	9	258.014	1	39.18	1		PN POOR
3001	BRAGG	107	9	258.014	1	39.60	0		FAIR
3001	BRAGG	108	9	258.521	1	40.14	1		PN GOOD
3001	BRAGG	108	9	258.521	1	40.46	0		STRONG
3001	BRAGG	109	9	260.971	1	41.88	1		PN POOR
3001	BRAGG	109	9	260.971	1	45.10	0		WEAK
3001	BRAGG	111	9	270.964	1	40.42	1		PN GOOD
3001	BRAGG	111	9	270.964	1	40.73	0		FAIR
3001	BRAGG	111	9	270.964	1	43.86	0		FAIR
3001	BRAGG	113	9	257.129	1	40.44	1		PN GOOD
3001	BRAGG	113	9	257.129	1	41.67	0		FAIR
3001	BRAGG	114	9	259.655	1	34.73	1		PN GOOD
3001	BRAGG	114	9	259.655	1	38.04	0		FAIR
3001	BRAGG	114	9	259.655	1	41.15	0		FAIR
3001	BRAGG	115	9	262.173	1	42.18	1		PN GOOD
3001	BRAGG	115	9	262.173	1	46.07	0		FAIR
3001	BRAGG	115	9	262.173	1	45.21	0		STRONG
3001	BRAGG	115	9	262.173	1	45.68	0		STRONG
3001	BRAGG	116	9	265.917	1	41.83	1		PN POOR
3001	BRAGG	116	9	265.917	1	42.20	0		WEAK
3001	BRAGG	116	9	265.917	1	44.96	0		STRONG
3001	BRAGG	116	9	265.917	1	45.65	0		STRONG
3001	BRAGG	116	9	265.917	1	49.25	0		STRONG
3001	BRAGG	117	9	272.219	1	42.48	1		PN POOR
3001	BRAGG	117	9	272.219	1	46.09	0		FAIR
3001	BRAGG	118	9	278.283	1	42.21	1		PN POOR
3001	BRAGG	118	9	278.283	1	45.18	0		FAIR
3001	BRAGG	119	9	188.896	1	34.47	1		PN GOOD
3001	BRAGG	119	9	188.896	1	34.98	3		STRONG
3001	BRAGG	119	9	188.896	1	36.07	4		STRONG
3001	BRAGG	119	9	188.896	1	42.11	5		WEAK
3001	BRAGG	121	9	203.963	1	33.13	1		PN POOR
3001	BRAGG	121	9	203.963	1	34.16	3		STRONG
3001	BRAGG	121	9	203.963	1	35.57	4		STRONG
3001	BRAGG	121	9	203.963	1	40.76	5		FAIR
3001	BRAGG	121	9	203.963	1	41.82	6		WEAK
3001	BRAGG	122	9	210.776	1	34.64	1		PN GOOD
3001	BRAGG	122	9	210.776	1	35.84	3		STRONG
3001	BRAGG	122	9	210.776	1	37.21	4		STRONG
3001	BRAGG	122	9	210.776	1	42.47	5		FAIR
3001	BRAGG	122	9	210.776	1	43.44	6		WEAK
3001	BRAGG	124	9	225.717	1	35.98	1		PN POOR
3001	BRAGG	124	9	225.717	1	37.48	2		FAIR

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3001	BRAGG	124	9	225.717	1	37.65	3		STRONG
3001	BRAGG	124	9	225.717	1	39.28	4		STRONG
3001	BRAGG	124	9	225.717	1	42.77	5		STRONG
3001	BRAGG	124	9	225.717	1	43.77	6		FAIR
3001	BRAGG	125	9	235.550	1	37.84	1		PN GOOD
3001	BRAGG	125	9	235.550	1	39.32	2		WEAK
3001	BRAGG	125	9	235.550	1	39.35	4		STRONG
3001	BRAGG	125	9	235.550	1	39.66	3		FAIR
3001	BRAGG	125	9	235.550	1	44.44	5		STRONG
3001	BRAGG	125	9	235.550	1	45.50	6		FAIR
3001	BRAGG	126	9	300.245	1	45.40	1		PN POOR
3001	BRAGG	126	9	300.245	1	46.64	8		POOR
3001	BRAGG	126	9	300.245	1	47.95	2		POOR
3001	BRAGG	126	9	300.245	1	49.73	3		POOR
3001	BRAGG	126	9	300.245	1	50.23	5		POOR
3001	BRAGG	126	9	300.245	1	51.68	4		POOR
3001	BRAGG	126	9	300.245	1	53.95	0		LARGE AMP LOW FREQ
3001	BRAGG	132	9	186.313	1	30.00	1		PN FAIR
3001	BRAGG	132	9	186.313	1	30.62	3		STRONG
3001	BRAGG	132	9	186.313	1	38.94	5		WEAK
3001	BRAGG	133	9	193.120	1	31.59	1		PN FAIR
3001	BRAGG	133	9	193.120	1	32.51	3		STRONG
3001	BRAGG	133	9	193.120	1	35.65	4		FAIR
3001	BRAGG	133	9	193.120	1	40.30	5		WEAK
3001	BRAGG	134	9	200.446	1	32.38	1		PN FAIR
3001	BRAGG	134	9	200.446	1	33.42	3		FAIR
3001	BRAGG	134	9	200.446	1	34.96	4		STRONG
3001	BRAGG	134	9	200.446	1	40.22	5		FAIR
3001	BRAGG	134	9	200.446	1	41.96	6		WEAK
3001	BRAGG	135	9	207.408	1	34.09	1		PN FAIR
3001	BRAGG	135	9	207.408	1	34.91	3		STRONG
3001	BRAGG	135	9	207.408	1	36.94	4		STRONG
3001	BRAGG	135	9	207.408	1	42.14	5		FAIR
3001	BRAGG	135	9	207.408	1	43.22	6		WEAK
3001	BRAGG	136	9	214.532	1	34.44	1		PN POOR
3001	BRAGG	136	9	214.532	1	35.53	3		STRONG
3001	BRAGG	136	9	214.532	1	37.80	4		STRONG
3001	BRAGG	136	9	214.532	1	42.50	5		FAIR
3001	BRAGG	136	9	214.532	1	43.68	6		WEAK
3001	BRAGG	138	9	228.785	1	36.64	1		PN POOR
3001	BRAGG	138	9	228.785	1	38.07	2		STRONG
3001	BRAGG	138	9	228.785	1	38.78	3		STRONG
3001	BRAGG	138	9	228.785	1	40.60	4		STRONG
3001	BRAGG	138	9	228.785	1	43.50	5		STRONG
3001	BRAGG	138	9	228.785	1	45.60	6		FAIR
3001	BRAGG	139	9	235.688	1	37.13	1		PN POOR
3001	BRAGG	139	9	235.688	1	39.26	2		STRONG
3001	BRAGG	139	9	235.688	1	39.93	3		STRONG
3001	BRAGG	139	9	235.688	1	42.33	4		STRONG
3001	BRAGG	139	9	235.688	1	44.03	5		STRONG

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3001	BRAGG	139	9	235.688	1	46.08	6		FAIR
3001	BRAGG	140	9	244.294	1	37.97	1		PN POOR
3001	BRAGG	140	9	244.294	1	40.26	2		WEAK
3001	BRAGG	140	9	244.294	1	40.87	3		FAIR
3001	BRAGG	140	9	244.294	1	42.28	4		STRONG
3001	BRAGG	140	9	244.294	1	45.10	5		FAIR
3001	BRAGG	140	9	244.294	1	46.43	6		FAIR
3001	BRAGG	141	9	249.516	1	38.42	1		PN POOR
3001	BRAGG	141	9	249.516	1	40.94	2		FAIR
3001	BRAGG	141	9	249.516	1	41.50	3		STRONG
3001	BRAGG	141	9	249.516	1	43.72	4		FAIR
3001	BRAGG	141	9	249.516	1	45.70	5		STRONG
3001	BRAGG	141	9	249.516	1	46.70	6		FAIR
3001	BRAGG	142	9	255.997	1	39.27	1		PN POOR
3001	BRAGG	142	9	255.997	1	41.64	2		WEAK
3001	BRAGG	142	9	255.997	1	42.17	3		FAIR
3001	BRAGG	142	9	255.997	1	44.14	4		FAIR
3001	BRAGG	142	9	255.997	1	45.73	5		FAIR
3001	BRAGG	142	9	255.997	1	47.25	6		FAIR
3001	BRAGG	143	9	263.212	1	40.13	1		PN POOR
3001	BRAGG	143	9	263.212	1	42.60	2		WEAK
3001	BRAGG	143	9	263.212	1	43.20	3		FAIR
3001	BRAGG	143	9	263.212	1	45.62	4		FAIR
3001	BRAGG	143	9	263.212	1	46.38	5		FAIR
3001	BRAGG	143	9	263.212	1	48.00	6		FAIR
3001	BRAGG	144	9	270.127	1	41.40	1		PN POOR
3001	BRAGG	144	9	270.127	1	44.14	2		WEAK
3001	BRAGG	144	9	270.127	1	45.12	3		FAIR
3001	BRAGG	144	9	270.127	1	47.24	4		FAIR
3001	BRAGG	144	9	270.127	1	47.72	5		FAIR
3001	BRAGG	144	9	270.127	1	49.25	6		POOR
3001	BRAGG	145	9	277.225	1	42.27	1		PN POOR
3001	BRAGG	145	9	277.225	1	43.77	8		POOR
3001	BRAGG	145	9	277.225	1	45.11	2		POOR
3001	BRAGG	145	9	277.225	1	46.46	3		POOR
3001	BRAGG	145	9	277.225	1	48.56	4		POOR
3001	BRAGG	145	9	277.225	1	48.80	5		POOR
3001	BRAGG	146	9	283.814	1	43.65	1		PN FAIR
3001	BRAGG	146	9	283.814	1	44.88	8		POOR
3001	BRAGG	146	9	283.814	1	46.20	2		POOR
3001	BRAGG	146	9	283.814	1	47.55	3		FAIR
3001	BRAGG	146	9	283.814	1	49.94	5		FAIR
3001	BRAGG	146	9	283.814	1	50.91	4		FAIR
3001	BRAGG	147	9	288.042	1	43.70	1		PN FAIR
3001	BRAGG	147	9	288.042	1	45.22	8		POOR
3001	BRAGG	147	9	288.042	1	46.62	2		POOR
3001	BRAGG	147	9	288.042	1	48.19	3		POOR
3001	BRAGG	147	9	288.042	1	49.96	5		POOR
3001	BRAGG	147	9	288.042	1	50.68	4		POOR
3001	BRAGG	149	9	420.839	1	64.07	2		POOR

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3001	BRAGG	149	9	420.839	1	66.42	9		POOR
3001	BRAGG	149	9	420.839	1	80.58	0		LARGE AMP LOW FREQ
3001	BRAGG	150	9	441.121	1	67.22	2		POOR
3001	BRAGG	150	9	441.121	1	68.68	9		POOR
3001	BRAGG	151	9	461.442	1	69.86	2		POOR
3001	BRAGG	151	9	461.442	1	70.46	9		POOR
3001	BRAGG	724	9	88.805	1	14.61	1		GOOD
GEORGIA INSTITUTE OF TECHNOLOGY									
3101	GEOTEC	102	8	359.658	0		1		
3101	GEOTEC	103	8	368.428	0	52.50	1		FAIR
3101	GEOTEC	104	8	375.389	0		1		
3101	GEOTEC	105	8	392.461	0		1		
3101	GEOTEC	106	8	398.541	0	55.87	1		GOOD
3101	GEOTEC	107	8	330.888	0		1		
3101	GEOTEC	108	8	330.365	0	47.64	1		FAIR
3101	SHELL	108	8	330.365	0	47.77	1		FAIR
3101	GEOTEC	109	8	331.364	0		1		
3101	GEOTEC	111	8	337.760	0	48.23	1		FAIR
3101	SHELL	111	8	337.760	0	48.27	1		FAIR
3101	GEOTEC	113	8	330.258	0	47.77	1		GOOD
3101	SHELL	113	8	330.258	0	47.81	1		FAIR
3101	GEOTEC	114	8	333.365	0	47.73	1		GOOD
3101	SHELL	114	8	333.365	0	47.16	1		POOR
3101	GEOTEC	115	8	336.148	0	47.98	1		GOOD
3101	SHELL	115	8	336.148	0	50.11	1		POOR
3101	GEOTEC	116	8	339.840	0	48.58	1		GOOD
3101	SHELL	116	8	339.840	0	49.77	1		POOR
3101	GEOTEC	117	8	345.845	0	50.40	1		POOR
3101	SHELL	117	8	345.845	0	50.38	1		POOR
3101	GEOTEC	118	8	351.213	0	49.90	1		GOOD
3101	GEOTEC	119	8	262.342	0	39.18	1		FAIR
3101	SHELL	119	8	262.342	0	39.12	1		FAIR
3101	GEOTEC	120	8	270.007	0	40.23	1		FAIR
3101	SHELL	120	8	270.007	0	40.05	1		FAIR
3101	GEOTEC	121	8	277.394	0	40.65	1		FAIR
3101	SHELL	121	8	277.394	0	41.24	1		FAIR
3101	GEOTEC	122	8	284.248	0	42.23	1		POOR
3101	GEOTEC	123	8	291.484	0	42.91	1		FAIR
3101	SHELL	123	8	291.484	0	42.78	1		FAIR
3101	GEOTEC	124	8	299.187	0	44.06	1		FAIR
3101	SHELL	124	8	299.187	0	44.36	1		FAIR
3101	GEOTEC	125	8	308.983	0	45.42	1		GOOD
3101	GEOTEC	126	8	373.619	0		1		
3101	GEOTEC	128	8	425.719	0	61.10	1		POOR
3101	SHELL	128	8	425.719	0	60.78	1		FAIR
3101	GEOTEC	132	8	259.762	0	39.64	1		POOR
3101	SHELL	132	8	259.762	0	39.06	1		FAIR
3101	GEOTEC	133	8	266.546	0	39.88	1		POOR
3101	SHELL	133	8	266.546	0	39.62	1		FAIR
3101	GEOTEC	134	8	273.887	0	40.58	1		POOR
3101	SHELL	134	8	273.887	0	40.65	1		FAIR

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3101	GEOTEC	135	8	280.849	0	41.48	1		FAIR
3101	SHELL	135	8	280.849	0	41.60	1		FAIR
3101	GEOTEC	136	8	287.970	0	42.59	1		POOR
3101	SHELL	136	8	287.970	0	43.45	1		POOR
3101	GEOTEC	137	8	295.007	0	43.70	1		POOR
3101	SHELL	137	8	295.007	0	44.20	1		FAIR
3101	GEOTEC	138	8	302.224	0	44.62	1		FAIR
3101	SHELL	138	8	302.224	0	44.56	1		FAIR
3101	GEOTEC	139	8	309.133	0	45.24	1		FAIR
3101	SHELL	139	8	309.133	0	45.16	1		FAIR
3101	GEOTEC	140	8	317.751	0		1		
3101	SHELL	140	8	317.751	0	46.23	1		FAIR
3101	GEOTEC	141	8	322.979	0	46.52	1		FAIR
3101	SHELL	141	8	322.979	0	46.62	1		FAIR
3101	GEOTEC	142	8	329.448	0		1		
3101	SHELL	142	8	329.448	0	47.52	1		FAIR
3101	GEOTEC	143	8	336.636	0	48.28	1		FAIR
3101	SHELL	143	8	336.636	0	48.58	1		FAIR
3101	GEOTEC	144	8	343.561	0	48.99	1		GOOD
3101	SHELL	144	8	343.561	0	49.10	1		FAIR
3101	GEOTEC	145	8	350.637	0	49.81	1		FAIR
3101	SHELL	145	8	350.637	0	49.92	1		FAIR
3101	GEOTEC	146	8	357.218	0	50.87	1		FAIR
3101	SHELL	146	8	357.218	0	50.86	1		FAIR
3101	GEOTEC	147	8	361.487	0		1		
3101	GEOTEC	149	8	494.163	0		1		
3101	GEOTEC	150	8	514.437	0	74.11	1		POOR
3101	SHELL	150	8	514.437	0	74.17	1		FAIR
3101	GEOTEC	151	8	534.743	0		1		
3101	SHELL	151	8	534.743	0	75.63	1		POOR
3101	GEOTEC	153	8	410.823	0		1		
3101	GEOTEC	154	8	427.569	0		1		
3101	GEOTEC	156	8	551.911	0		1		
3101	GEOTEC	601	8	269.192	0				
3101	GEOTEC	701	8	383.662	0				
3101	GEOTEC	702	8	716.839	0				
3101	GEOTEC	703	8	552.347	0				
3101	GEOTEC	704	8	482.394	0				
3101	GEOTEC	712	8	444.818	0				
3101	GEOTEC	713	8	569.389	0				
3101	GEOTEC	714	8	685.251	0				
3101	GEOTEC	716	8	466.745	0				
3101	GEOTEC	722	8	239.954	0	63.45	1		FAIR
3101	GEOTEC	723	8	457.205	0	60.25	0		POOR
3101	GEOTEC	724	8	22.032	0	3.63	1		GOOD
3101	SHELL	729	8	22.032	0	3.62	1		GOOD
UNIVERSITY OF MICHIGAN									
3301	POTTER	102	8	162.521	0	27.08	1		
3301	POTTER	103	8	171.080	0	28.03	1		
3301	POTTER	104	8	178.731	0	28.81	1		
3301	POTTER	105	8	197.325	0	31.10	1		

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3301	POTTER	106	8	205.322	0	32.61	1		
3301	POTTER	107	8	168.461	0	27.87	1		
3301	POTTER	108	8	177.388	0	29.25	1		
3301	POTTER	109	8	189.1[illegible]	0	30.55	1		
3301	POTTER	111	8	215.90[illegible]	0	34.40	1		NOISY
3301	POTTER	113	8	164.9[illegible]	0	27.64	1		
3301	POTTER	114	8	159.751	0	26.79	1		
3301	POTTER	115	8	155.144	0	26.11	1		
3301	POTTER	116	8	152.584	0	25.77	1		
3301	POTTER	117	8	154.348	0	26.05	1		
3301	POTTER	118	8	156.030	0	26.09	1		
3301	POTTER	119	8	73.019	0	12.68	1		
3301	POTTER	120	8	80.069	0	13.84	1		
3301	POTTER	121	8	86.775	0	14.73	1		
3301	POTTER	122	8	93.532	0	16.00	1		
3301	POTTER	123	8	100.455	0	17.18	1		
3301	POTTER	124	8	107.821	0	18.33	1		
3301	POTTER	125	8	117.014	0	20.83	1		
3301	POTTER	126	8	179.991	0	29.33	1		
3301	POTTER	128	8	231.429	0	36.73	1		
3301	POTTER	132	8	70.656	0	12.23	1		
3301	POTTER	133	8	76.727	0	13.25	1		
3301	POTTER	134	8	83.664	0	14.22	1		
3301	POTTER	135	8	90.147	0	15.40	1		
3301	POTTER	136	8	96.940	0	16.48	1		
3301	POTTER	137	8	103.639	0	17.53	1		
3301	POTTER	138	8	110.530	0	18.74	1		
3301	POTTER	139	8	117.192	0	21.00	1		
3301	POTTER	140	8	125.642	0	21.64	1		
3301	POTTER	141	8	130.731	0	22.19	1		
3301	POTTER	142	8	137.010	0	23.23	1		
3301	POTTER	143	8	143.888	0	24.53	1		
3301	POTTER	144	8	150.688	0	25.35	1		
3301	POTTER	145	8	157.500	0	26.29	1		
3301	POTTER	146	8	163.948	0	27.99	1		
3301	POTTER	147	8	168.430	0	27.83	1		
3301	POTTER	150	8	319.554	0	50.32	0		
3301	POTTER	151	8	339.753	0	52.33	0		NOISY WWV BAD
3302	AVENTN	102	8	262.691	0	38.78	1		NOISY
3302	AVENTN	103	8	262.547	0	39.28	1		
3302	AVENTN	104	8	261.525	0	38.96	1		
3302	AVENTN	105	8	269.816	0	39.97	1		
3302	AVENTN	106	8	269.548	0	39.83	1		
3302	AVENTN	107	8	302.707	0	43.87	1		
3302	AVENTN	108	8	312.599	0	45.35	1		
3302	AVENTN	109	8	324.535	0	46.80	1		
3302	AVENTN	111	8	350.205	0	49.85	1		
3302	AVENTN	113	8	298.719	0	43.37	1		
3302	AVENTN	114	8	291.337	0	42.79	1		
3302	AVENTN	115	8	283.420	0	41.51	1		

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3302	AVENTN	116	8	276.194	0	40.67	1		WWV BAD
3302	AVENTN	117	8	272.625	0	39.95	1		
3302	AVENTN	118	8	266.415	0	39.32	1		
3302	AVENTN	119	8	202.360	0	32.15	1		
3302	AVENTN	120	8	208.003	0	31.77	1		
3302	AVENTN	121	8	213.193	0	33.51	1		
3302	AVENTN	122	8	219.026	0	34.31	1		
3302	AVENTN	123	8	224.765	0	34.49	1		
3302	AVENTN	124	8	230.859	0	35.49	1		
3302	AVENTN	125	8	238.185	0	36.36	1		
3302	AVENTN	126	8	292.232	0	42.28	1		
3302	AVENTN	128	8	338.496	0	49.38	1		SIGNAL POOR
3302	AVENTN	132	8	200.461	0	32.06	1		
3302	AVENTN	133	8	205.183	0	32.71	1		
3302	AVENTN	134	8	210.878	0	32.88	1		
3302	AVENTN	135	8	216.063	0	34.10	1		
3302	AVENTN	136	8	221.662	0	34.31	1		
3302	AVENTN	137	8	227.152	0	35.31	1		
3302	AVENTN	138	8	232.816	0	35.90	1		
3302	AVENTN	139	8	238.384	0	36.23	1		
3303	MOROCK	102	8	360.376	0	50.88	1		
3303	MOROCK	103	8	359.386	0	50.93	1		
3303	MOROCK	104	8	357.221	0	50.51	1		
3303	MOROCK	105	8	363.521	0	51.57	1		
3303	MOROCK	106	8	361.523	0	51.28	1		
3303	MOROCK	107	8	397.095	0	54.97	1		
3303	MOROCK	108	8	405.542	0	56.15	1		
3303	MOROCK	109	8	415.779	0	57.30	1		
3303	MOROCK	111	8	438.045	0	60.10	1		
CARNEGIE INSTITUTION AND AIR FORCE TECHNICAL APPLICATIONS CENTER									
4102	UPSTRT	602	9	161.374	1	26.78	1		GOOD
4106	UPSTRT	149	9	515.400	1	73.36	1		POOR
4106	UPSTRT	150	9	529.303	1	74.51	1		POOR
4106	UPSTRT	151	9	543.689	1	75.41	1		POOR
4110	UPSTRT	140	9	364.830	1	50.29	1		POOR
4110	UPSTRT	141	9	367.597	1	52.04	1		
4110	UPSTRT	142	9	370.963	1	52.67	1		
4110	UPSTRT	143	9	374.297	1	53.73	1		FAIR
4110	UPSTRT	144	9	378.246	1	54.85	1		
4110	UPSTRT	145	9	381.688	1	55.09	1		
4110	UPSTRT	146	9	385.420	1	55.98	1		
4116	UPSTRT	108	9	415.216	1	58.22	1		GOOD
4116	UPSTRT	111	9	462.587	1	62.50	1		GOOD
4124	UPSTRT	114	9	342.861	1	43.82	1		
4124	UPSTRT	116	9	317.761	1	47.13	1		
4124	UPSTRT	117	9	308.842	1	45.98	1		
4124	UPSTRT	118	9	295.893	1	43.39	1		
4138	UPSTRT	132	9	222.444	1	34.01	1		FAIR
4138	UPSTRT	133	9	223.326	1	34.67	1		FAIR
4138	UPSTRT	134	9	225.193	1	35.32	1		
4138	UPSTRT	135	9	226.700	1	35.57	1		

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4138	UPSTRT	136	9	228.751	1	35.19	1		FAIR
4138	UPSTRT	137	9	230.777	1	35.79	1		FAIR
4138	UPSTRT	138	9	232.973	1	36.16	1		
4138	UPSTRT	139	9	235.372	1	36.06	1		
4140	UPSTRT	119	9	232.084	1	41.62	1		POOR
4140	UPSTRT	120	9	232.265	1	37.09	1		FAIR
4140	UPSTRT	121	9	232.107	1	35.88	1		FAIR
4140	UPSTRT	122	9	233.611	1	36.42	1		FAIR
4140	UPSTRT	123	9	234.619	1	36.15	1		POOR
4140	UPSTRT	124	9	235.754	1	36.12	1		
4140	UPSTRT	125	9	236.5 8	1	36.59	1		POOR
4142	UPSTRT	128	9	260.990	1	40.47	1		GOOD
4204	ZULU	601	9	218.283	1	33.96	1		
4204	ZULU	602	9	218.283	1	33.96	1		
4210	ZULU	132	9	195.004	1	31.69	1		VERY NOISY
4210	ZULU	134	9	194.351	1	31.67	1		BETTER THAN 133 134
4210	ZULU	135	9	194.241	1	31.72	1		GOOD
4210	ZULU	136	9	194.701	1	32.10	1		NOISY
4210	ZULU	137	9	195.200	1	31.61	1		POOR ONSET
4210	ZULU	138	9	195.884	1	31.98	1		
4210	ZULU	139	9	196.900	1	31.70	1		VERY GOOD
4212	ZULU	140	9	205.569	1	35.63	1		MAY BE EARLIER
4212	ZULU	141	9	205.977	1	32.66	1		FAIR
4212	ZULU	142	9	206.509	1	32.92	1		FAIR
4212	ZULU	143	9	206.735	1	33.31	1		CLEAR
4212	ZULU	144	9	207.953	1	34.25	1		CLEAR
4212	ZULU	145	9	208.606	1	33.76	1		CLEAR
4212	ZULU	146	9	209.964	1	34.30	1		GOOD
4212	ZULU	147	9	212.669	1	34.15	1		GOOD
4216	XECKS	114	9	262.747	1	34.45	1		VERY GOOD
4216	XECKS	115	9	256.308	1	40.91	1		VERY GOOD
4216	XECKS	116	9	250.798	1	39.77	1		VERY GOOD
4216	XECKS	117	9	248.970	1	38.90	1		VERY GOOD
4216	XECKS	118	9	245.075	1	37.21	1		GOOD
4218	ZULU	113	9	253.066	1	39.20	1		GOOD EVENT
4218	ZULU	114	9	244.808	1	32.37	1		POSS EARLIER
4218	ZULU	115	9	236.170	1	38.37	1		
4218	ZULU	116	9	228.401	1	36.43	1		
4218	ZULU	117	9	224.546	1	35.63	1		
4218	ZULU	118	9	218.313	1	33.83	1		
4220	XECKS	128	9	267.340	1		1		NO ENERGY
4222	ZULU	126	9	203.610	1	32.96	1		FAIR
4222	ZULU	128	9	244.902	1	37.90	1		
4226	XECKS	132	9	149.955	1	24.81	1		GOOD
4226	XECKS	133	9	148.465	1	25.59	1		QUESTIONABLE
4226	XECKS	134	9	147.891	1	25.55	1		FAIR
4226	XECKS	135	9	147.196	1	25.50	1		GOOD
4226	XECKS	136	9	147.140	1	25.29	1		GOOD
4226	XECKS	137	9	147.212	1	25.43	1		GOOD
4226	XECKS	138	9	147.545	1	25.44	1		VERY GOOD

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4226	XECKS	139	9	148.309	1	25.40	1		EXCELLENT
4228	XECKS	145	9	182.666	1	30.65	1		VERY GOOD
4228	XECKS	146	9	183.681	1	31.26	1		VERY GOOD
4228	XECKS	147	9	186.202	1	31.12	1		VERY GOOD
4232	XECKS	119	9	137.849	1	26.73	1		GOOD EVENT
4232	XECKS	120	9	144.817	1	23.72	1		EXCELLENT
4232	XECKS	121	9	151.383	1	25.86	1		EXCELLENT
4232	XECKS	122	9	158.057	1	27.[illegible]	1		EXCELLENT
4232	XECKS	123	9	164.848	1	29.[illegible]	1		EXCELLENT
4232	XECKS	124	9	172.057	1	29.18	1		EXCELLENT
4232	XECKS	125	9	180.980	1	30.45	1		EXCELLENT
4234	ZULU	119	9	118.446	1	23.35	1		GOOD
4234	ZULU	120	9	124.605	1	20.22	1		GOOD
4234	ZULU	121	9	130.382	1	22.00	1		GOOD
4234	ZULU	122	9	136.629	1	23.93	1		DEFINITE BY HERE
4234	ZULU	123	9	142.895	1	25.64	1		
4234	ZULU	124	9	149.575		25.55	1		GOOD
4234	ZULU	125	9	157.770	1	27.37	1		GOOD
4302	YOKE	113	9	491.852	1	69.33	1		
4302	YOKE	114	9	492.966	1	63.46	1		
4302	YOKE	116	9	494.201	1	69.73	1		
4302	YOKE	117	9	497.469	1	69.99	1		
4302	YOKE	118	9	499.012	1	69.17	1		
4304	TASMAN	142	9	448.350	1	62.55	1		GOOD
4304	TASMAN	143	9	455.192	1	63.45	1		EXCELLENT
4304	TASMAN	144	9	461.957	1	65.03	1		VERY GOOD
4304	TASMAN	145	9	468.700	1	65.34	1		EXCELLENT
4304	TASMAN	146	9	475.091	1	66.51	1		EXCELLENT
4304	TASMAN	147	9	479.602	1	66.66	1		EXCELLENT
4304	YOKE	705	9	642.361	1	88.75	1		POOR
4308	YOKE	132	9	317.349	1	45.14	1		
4308	YOKE	133	9	323.502	1	47.04	1		
4308	YOKE	134	9	330.438	1	47.66	1		
4308	YOKE	135	9	336.862	1	48.64	1		
4310	YOKE	136	9	329.336	1	47.84	1		
4310	YOKE	137	9	335.681	1	48.89	1		
4310	YOKE	138	9	342.181	1	49.72	1		
4310	YOKE	139	9	348.475	1	50.24	1		
4312	YOKE	145	9	354.167	1	50.49	1		
4312	YOKE	146	9	360.000	1	51.59	1		
4312	YOKE	147	9	364.557	1	51.99	1		
4312	YOKE	722	9	323.629	1	50.19	1		FAIR
4316	YOKE	150	9	460.579	1	67.91	1		CHECKED
4316	YOKE	151	9	479.138	1	70.73	1		CHECKED
4326	YOKE	128	9	411.186	1	65.90	1		MAY BE EARLIER
4330	YOKE	140	9	299.849	1	44.15	1		
4330	YOKE	141	9	304.739	1	44.39	1		
4330	YOKE	142	9	310.751	1	45.01	1		
4330	YOKE	143	9	317.254	1	45.95	1		
4332	YOKE	601	9	169.248	1	26.39	1		

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4332	YOKE	602	9	169.248	1	26.38	1		
4340	YOKE	119	9	318.254	1	49.70	1		
4340	YOKE	120	9	325.861	1	46.74	1		
4340	YOKE	121	9	333.136	1	48.81	1		
4342	YOKE	122	9	313.114	1	46.80	1		POSS TIMING ERROR
4342	YOKE	123	9	320.299	1	48.01	1		
4342	YOKE	124	9	327.928	1	48.01	1		
4342	YOKE	125	9	337.517	1	49.66	1		
4404	VIRGNA	140	9	461.856	1	64.35	1		GOOD
4404	VIRGNA	141	9	466.368	1	64.45	1		FAIR
4404	VIRGNA	142	9	471.894	1	64.95	1		FAIR
4404	VIRGNA	144	9	483.833	1	67.13	1		POOR
4404	VIRGNA	145	9	489.656	1	67.86	1		POOR
4404	VIRGNA	146	9	495.357	1	68.60	1		POOR
4404	VIRGNA	147	9	499.895	1	68.70	1		GOOD
4404	VRGNA	722	9	299.090	1	46.24	1		DEFINITE BY HERE
4406	VIRGNA	149	9	592.342	1	84.15	1		POOR
4406	VIRGNA	150	9	610.446	1	86.47	1		GOOD
4406	VIRGNA	151	9	628.746	1	89.00	1		POOR
4406	VRGNA	723	9	477.464	1	74.71	1		VERY POOR
4406	VRGNA	724	9	265.936	1	40.95	1		FAIR TO GOOD
4408	SUVA	102	9	441.282	1	61.59	1		POOR
4408	SUVA	103		437.551	1	62.83	1		FAIR
4408	SUVA	104	9	432.669	1	61.20	1		VERY GOOD
4408	SUVA	105	9	434.981	1	61.21	1		GOOD
4408	SUVA	106	9	4[illegible].139	1	61.01	1		EXCELLENT
4408	SUVA	107	9	90.176	1	66.05	1		POOR
4408	SUVA	108	9	499.635	1	68.95	1		FAIR TO POOR
4408	SUVA	109	9	510.763	1	70.18	1		POOR
4408	SUVA	111	9	534.201	1	71.18	1		VERY GOOD
4408	SUVA	113	9	486 251	1	67.10	1		FAIR
4408	SUVA	114	9	478.816	1	64.84	1		POOR
4408	SUVA	115	9	470.411	1	62.36	1		VERY POOR
4408	SUVA	117	9	457.180	1	63.70	1		POOR
4408	SUVA	118	9	448.598	1	61.48	1		POOR
4408	SUVA	120	9	395.451	1	56.71	1		POOR
4408	SUVA	121	9	400.436	1	57.45	1		FAIR
4408	SUVA	122	9	406.086	1	57.33	1		FAIR
4408	SUVA	123	9	411.571	1	59.13	1		POOR TO FAIR
4408	SUVA	124	9	417.352	1	58.38	1		POOR
4408	SUVA	125	9	424.174	1	59.35	1		POOR
4408	SUVA	126	9	474.266	1	66.33	1		POOR
4408	SUVA	128	9	516.965	1	70.96	1		POOR
4408	SUVA	132	9	388.083	1	65.49	1		VERY POOR
4408	SUVA	133	9	392.695	1	64.31	1		POOR
4408	SUVA	134	9	398.233	1	56.77	1		FAIR
4408	SUVA	135	9	403.213	1	59.04	1		FAIR
4408	SUVA	136	9	408.574	1	57.67	1		QUESTIONABLE
4408	SUVA	137	9	413.788	1	58.19	1		POOR
4408	SUVA	138	9	419.132	1	58.74	1		FAIR

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4408	SUVA	139	9	424.374	1	59.08	1		FAIR TO GOOD
4408	SUVA	140	9	431.263	1	59.76	1		FAIR TO POOR
4408	SUVA	141	9	435.333	1	59.66	1		FAIR TO POOR
4408	SUVA	142	9	440.308	1	60.43	1		POOR
4408	SUVA	143	9	445.514	1	61.06	1		VERY POOR
4408	SUVA	144	9	451.045	1	63.69	1		VERY UNCERTAIN
4408	SUVA	145	9	456.238	1	62.71	1		POOR
4408	SUVA	146	9	461.435	1	63.90	1		FAIR TO GOOD
4408	SUVA	147	9	465.859	1	64.28	1		FAIR TO GOOD
4408	SUVA	149	9	575.661	1	44.87	1		SOMETHING WRONG
4408	SUVA	150	9	593.263	1	83.90	1		GOOD - - BIG EVEN
4408	SUVA	151	9	611.098	1	85.31	1		BIG EVENT
4410	VIRGNA	107	9	466.739	1	63.12	1		GOOD
4410	VIRGNA	108	9	477.227	1	65.64	1		MAY BE EARLIER
4410	VIRGNA	109	9	489.442	1	68.33	1		POOR
4410	VIRGNA	111	9	514.833	1	68.97	1		VERY GOOD
4414	VIRGNA	601	9	115.857	1	19.70	1		VERY GOOD
4414	VIRGNA	602	9	115.857	1	19.72	1		GOOD
4414	VRGNA	726	9	222.060	1	35.47	1		VERY WEAK
4418	VIRGNA	102	9	431.317	1	57.35	1		GOOD
4418	VIRGNA	103	9	430.370	1	61.62	1		FAIR
4420	VIRGNA	106	9	403.669	1	57.40	1		VERY GOOD
4424	VIRGNA	114	9	401.432	1	51.41	1		VERY GOOD
4424	VIRGNA	115	9	391.146	1	57.09	1		DEFINITE BY HERE
4424	VIRGNA	116	9	381.050	1	54.70	1		DEFINITE BY HERE
4424	VIRGNA	117	9	374.383	1	53.81	1		GOOD
4424	VIRGNA	118	9	363.967	1	51.65	1		DEFINITE BY HERE
4428	WAYOUT	150	9	648.729	1	90.81	1		GOOD
4428	WAYOUT	151	9	668.437	1	93.88	1		FAIR
4436	VIRGNA	119	9	313.989	1	48.86	1		FAIR TO POOR
4436	VIRGNA	120	9	320.126	1	45.58	1		GOOD
4436	VIRGNA	121	9	325.775	1	47.62	1		GOOD
4436	VIRGNA	122	9	331.867	1	48.63	1		GOOD
4436	VIRGNA	123	9	337.935	1	50.20	1		FAIR TO GOOD
4436	VIRGNA	124	9	344.326	1	50.12	1		FAIR
4436	VIRGNA	125	9	352.014	1	50.92	1		GOOD
4502	FNWV	105	9	540.671	1	75.30	1		
4502	FNWV	106	9	541.534	1	75.60	1		EXCELLENT
4502	FNWV	111	9	636.239	1	84.70	1		
4502	FNWV	139	9	534.324	1	73.30	1		
4502	FNWV	147	9	576.900	1	80.60	1		QUESTIONABLE
4502	FNWV	153	9	617.077	1	84.20	1		
4502	FNWV	156	9	738.291	1	102.30	1		
4502	FNWV	601	9	111.905	1	19.70	1		
4502	FNWV	602	9	111.905	1	19.30	1		
4618	TASMAN	102	9	725.437	1	94.72	1		FAIR
4618	TASMAN	103	9	731.836	1	99.47	1		GOOD EVENT
4618	TASMAN	104	9	730.133	1	99.96	1		SLOW SPEED
4618	TASMAN	105	9	749.790	1	101.79	1		GOOD - - CHECKED
4618	TASMAN	105	9	749.790	1	101.79	1		GOOD - - CHECKED

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	F	TIME SEC.	P	VEL. KM/SEC	COMMENT
4618	TASMAN	106	9	752.728	1	102.05	1		GOOD
4618	TASMAN	106	9	752.728	1	102.05	1		GOOD
4624	TASMAN	113	9	598.068	1	82.81	1		VERY GOOD
4624	TASMAN	114	9	660.322	1	76.98	1		VERY GOOD
4624	TASMAN	115	9	601.733	1	84.23	1		VERY GOOD
4624	TASMAN	116	9	603.513	1	83.56	1		GOOD
4624	TASMAN	117	9	607.461	1	83.87	1		GOOD
4624	TASMAN	118	9	609.698	1	83.01	1		GOOD
4626	TASMAN	120	9	503.507	1	69.41	1		NOISY
4626	TASMAN	121	9	510.587	1	71.58	1		NOISY
4626	TASMAN	122	9	517.459	1	72.62	1		NOISY
4626	TASMAN	123	9	524.555	1	74.21	1		BEST OF THIS SERIES
4626	TASMAN	124	9	532.076	1	75.13	1		NO EARLIER
4626	TASMAN	125	9	541.456	1	75.75	1		VERY GOOD
4628	TASMAN	128	9	621.500	1	84.81	1		FAIR
4628	TASMAN	132	9	460.334	1	63.94	1		GOOD
4628	TASMAN	133	9	466.818	1	65.59	1		GOOD&COMPARE 134<
4628	TASMAN	134	9	474.009	1	66.34	1		VERY GOOD
4628	TASMAN	135	9	480.721	1	67.53	1		VERY GOOD
4628	TASMAN	136	9	487.664	1	68.12	1		POORER THAN 135,134
4628	TASMAN	137	9	494.484	1	69.28	1		UNCERTAIN
4628	TASMAN	138	9	501.465	1	70.34	1		LIKE 136
4628	TASMAN	139	9	508.179	1	70.76	1		EXCELLENT
4628	TASMAN	601	9	230.545	1	37.24	1		GOOD
4428	WAYOUT	723	9	356.528	1	61.05	1		NOT FIRST ARRIVAL
4428	WAYOUT	724	9	185.010	1	29.88	1		EXCELLENT
4602	TASMAN	709	9	317.294	1	49.30	1		DEFINITE BY HERE
4630	YOKE	102	9	682.191	1	92.64	1		POOR TO FAIR
4630	YOKE	103	9	688.633	1	94.26	1		FAIR
4630	YOKE	104	9	692.998	1	94.67	1		FAIR
4630	YOKE	105	9	706.769	1	95.94	1		FAIR
4630	YOKE	106	9	709.822	1	95.52	1		GOOD
4630	YOKE	712	9	135.935	1	22.97	1		POOR
4630	YOKE	713	9	337.853	1	50.20	1		VERY POOR
4632	YOKE	108	9	608.206	1	83.34	1		FAIR
4632	YOKE	111	9	608.013	1	81.70	1		FAIR
4636	TASMAN	705	9	538.471	1	74.70	1		POOR
4646	TASMAN	602	9	247.087	1	39.67	1		POOR
4650	CGVA	108	9	728.492	1	98.70	1		POSS & 10 SEC
4650	CGVA	111	9	650.476	1	87.90	1		
4650	CGVA	139	9	645.294	1	87.30	1		
4704	WAYOUT	710	9	478.088	1	69.75	1		GOOD TO VERY GOOD
4706	WAYOUT	147	9	576.450	1	79.60	1		GOOD
4706	WAYOUT	722	9	283.728	1	43.84	1		EXCELLENT
4710	WAYOUT	134	9	545.072	1	75.47	1		POOR
4710	WAYOUT	135	9	551.329	1	77.65	1		POOR
4710	WAYOUT	136	9	557.869	1	77.95	1		FAIR
4710	WAYOUT	137	9	564.265	1	78.46	1		FAIR
4710	WAYOUT	138	9	570.805	1	79.19	1		FAIRLY GOOD
4710	WAYOUT	139	9	577.125	1	79.50	1		GOOD

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	Y	TIME SEC.	P	VEL. KM/SEC	COMMENT
4720	WAYOUT	102	9	533.429	1	71.30	1		VERY POOR
4720	WAYOUT	103	9	534.040	1	74.79	1		FAIRLY GOOD
4720	WAYOUT	104	9	533.053	1	74.40	1		GOOD
4720	WAYOUT	105	9	540.432	1	74.80	1		FAIR
4720	WAYOUT	106	9	538.876	1	75.00	1		EXCELLENT
4722	WAYOUT	140	9	539.693	1	74.87	1		VERY GOOD
4722	WAYOUT	141	9	544.514	1	74.98	1		GOOD
4722	WAYOUT	142	9	550.432	1	75.66	1		GOOD
4722	WAYOUT	143	9	556.797	1	76.72	1		FAIRLY GOOD
4722	WAYOUT	144	9	563.233	1	78.58	1		FAIRLY GOOD
4722	WAYOUT	145	9	569.515	1	78.54	1		GOOD
4722	WAYOUT	146	9	575.572	1	79.70	1		FAIR TO GOOD
4724	BLWV	106	9	613.657	1	84.70	1		
4724	BLWV	108	9	611.208	1	83.80	1		FAIR
4724	BLWV	139	9	566.404	1	78.10	1		GOOD
4724	BLWV	147	9	616.187	1	84.00	1		GOOD
4724	BLWV	153	9	662.772	1	91.20	1		BIG EVENT
4724	BLWV	154	9	678.602	1	94.60	1		
4724	BLWV	601	9	227.207	1	37.90	1		FAIR
4724	BLWV	602	9	227.207	1	37.50	1		
4728	WAYOUT	121	9	581.140	1	78.90	1		FAIR
4728	WAYOUT	122	9	587.951	1	80.76	1		GOOD
4728	WAYOUT	123	9	594.930	1	82.74	1		FAIRLY GOOD
4728	WAYOUT	124	9	602.316	1	82.83	1		GOOD
4728	WAYOUT	125	9	611.464	1	83.52	1		FAIR TO GOOD
4734	UPSTRT	103	9	543.564	1	76.97	1		GOOD
4734	UPSTRT	104	9	544.246	1	76.67	1		GOOD
4734	UPSTRT	105	9	553.739	1	76.40	1		GOOD
4734	UPSTRT	106	9	553.681	1	77.16	1		GOOD
4736	WAYOUT	718	9	300.328	1	45.13	1		POOR
4736	WAYOUT	719	9	643.449	1	93.61	1		VERY POOR
4736	WAYOUT	114	9	593.439	1	76.09	1		GOOD
4738	WAYOUT	115	9	592.949	1	83.04	1		GOOD
4738	WAYOUT	116	9	592.789	1	82.13	1		GOOD
4738	WAYOUT	117	9	595.043	1	82.41	1		GOOD
4738	WAYOUT	118	9	595.168	1	81.31	1		GOOD
4738	WAYOUT	715	9	276.439	1	43.05	1		FAIR
4738	WAYOUT	716	9	338.351	1	50.67	1		VERY POOR
4742	WAYOUT	108	9	526.161	1	73.21	1		VERY GOOD
4742	WAYOUT	109	9	529.884	1	76.17	1		FAIR EMERGENT
4742	WAYOUT	111	9	539.982	1	73.49	1		VERY GOOD
4742	WAYOUT	601	9	194.968	1	32.00	1		GOOD
4742	WAYOUT	602	9	194.968	1	32.00	1		GOOD
4742	WAYOUT	726	9	204.649	1	34.11	1		POOR
4742	WAYOUT	727	9	175.074	1	23.56	1		SOMETHING WRONG
4820	ZULU	104	9	640.467	1	88.85	1		UNCERTAIN
4820	ZULU	106	9	637.865	1	85.94	1		EXCELLENT
4924	BRPA	106	9	631.721	1	86.70	1		
4924	BRPA	111	9	773.641	1	102.00	1		
4924	BRPA	601	9	241.315	1	35.40	1		

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4924	BRPA	602	9	241.315	1	39.30	1		
5056	CLFARM	102	9	556.111	1	72.72	1		UNCERTAIN
5056	CLFARM	103	9	545.844	1	75.25	1		GOOD
5056	CLFARM	104	9	534.869	1	73.95	1		FAIR
5056	CLFARM	105	9	527.[illegible]	1	72.21	1		FAIR
5056	CLFARM	106	9	516.818	1	71.13	1		EXCELLENT
5056	CLFARM	107	9	639.287	1	83.40	1		
5056	CLFARM	108	9	652.756	1	86.88	1		POOR
5056	CLFARM	109	9	667.887	1	88.62	1		POOREK THAN 108
5056	CLFARM	111	9	697.974	1	91.07	1		
5056	CLFARM	113	9	634.139	1	84.62	1		POOR
5056	CLFARM	114	9	622.247	1	77.61	1		FAIR
5056	CLFARM	115	9	609.180	1	83.21	1		FAIR
5056	CLFARM	116	9	595.877	1	80.72	1		FAIR
5056	CLFARM	117	9	585.778	1	79.33	1		UNCERTAIN
5056	CLFARM	118	9	570.985	1	76.35	1		FAIR
5056	CLFARM	119	9	537.826	1	75.42	1		FAIR
5056	CLFARM	120	9	541.337	1	72.32	1		POOR
5056	CLFARM	121	9	544.300	1	73.92	1		GOOD
5056	CLFARM	122	9	548.381	1	74.28	1		GOOD
5056	CLFARM	123	9	552.063	1	75.71	1		FAIR
5056	CLFARM	124	9	555.905	1	74.87	1		FAIR
5056	CLFARM	125	9	560.077	1	75.44	1		
5056	CLFARM	126	9	594.399	1	80.56	1		FAIR
5056	CLFARM	128	9	625.514	1	84.58	1		GOOD ARRIVAL
5056	CLFARM	132	9	536.624	1	71.11	1		POOR
5056	CLFARM	133	9	539.403	1	72.82	1		FAIR
5056	CLFARM	134	9	543.107	1	73.44	1		FAIR
5056	CLFARM	135	9	546.264	1	74.44	1		
5056	CLFARM	136	9	549.837	1	73.61	1		FAIR
5056	CLFARM	137	9	553.255	1	74.42	1		FAIR
5056	CLFARM	138	9	556.754	1	74.54	1		POOR
5056	CLFARM	140	9	565.124	1	75.82	1		FAIR
5056	CLFARM	141	9	567.926	1	75.64	1		GOOD
5056	CLFARM	142	9	571.309	1	76.43	1		FAIR
5056	CLFARM	143	9	574.627	1	78.04	1		POOR
5056	CLFARM	144	9	578.529	1	78.50	1		GOOD
5056	CLFARM	145	9	581.885	1	78.25	1		GOOD
5056	CLFARM	146	9	585.515	1	78.88	1		GOOD
5056	CLFARM	147	9	589.342	1	79.74	1		FAIR
5056	CLFARM	149	9	670.726	1	88.00	1		POOR S/N
5056	CLFARM	150	9	684.574	1	93.42	1		POOR
5056	CLFARM	151	9	698.818	1	95.09	1		VERY POOR
5056	CLFARM	153	9	617.588	1	83.21	1		GOOD EVENT
5056	CLFARM	154	9	627.572	1	85.38	1		FAIR
5056	CLFARM	156	9	711.433	1	90.99	1		VERY POOR
5122	STIMES	149	9	544.118	1		1		
5122	STIMES	150	9	554.726	1		1		
5122	STIMES	151	9	565.951	1		1		
5130	STIMES	140	9	425.074	1	66.94	1		POOR

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
5130	STIMES	141	9	426.281	1		1		
5130	STIMES	142	9	427.706	1		1		VERY POOR
5130	STIMES	143	9	428.813	1		1		
5130	STIMES	144	9	430.736	1		1		
5130	STIMES	145	9	432.002	1		1		
5130	STIMES	146	9	433.806	1	61.33	1		FAIR
5130	STIMES	147	9	436.717	1		1		
5210	STIMES	601	9	210.199	1	34.33	1		GOOD
5210	STIMES	602	9	210.199	1	34.72	1		GOOOD
5216	STIMES	107	9	592.547	1	78.00	1		GOOD
5216	STIMES	108	9	605.327	1	82.07	1		FAIR
5216	STIMES	109	9	619.777	1		1		
5216	STIMES	111	9	648.750	1	85.47	1		FAIR TO GOOD
5304	CPO	102	9	875.009	1	112.60	1		
5304	CPO	105	9	913.694	1	119.90	1		FAIR
5304	CPO	106	9	920.745	1	122.30	1		GOOD
5304	CPO	108	9	804.553	1	108.70	1		FAIR
5304	CPO	111	9	782.622	1	104.00	1		GOOD
5304	CPO	139	9	818.324	1	109.20	1		
5304	CPO	153	9	918.126	1	121.70	1		
5304	CPO	154	9	934.741	1	124.70	1		
5304	CPO	156	9	1057.755	1	140.00	1		QUESTIONABLE
UNITED STATES GEOLOGICAL SURVEY									
6001	HOTEL	132	8	431.780	0	60.36	1	8.13	
6001	HOTEL	133	8	438.580	0	61.20	1	8.20	
6001	HOTEL	134	8	445.910	0	62.10	1	8.04	
6001	HOTEL	135	8	452.880	0	62.87	1	8.08	
6001	HOTEL	136	8	459.990	0	63.86	1	8.12	
6001	HOTEL	137	8	467.030	0	64.81	1	8.06	
6001	HOTEL	138	8	474.250	0	65.42	1	8.11	
6001	HOTEL	139	8	481.160	0	66.31	1	8.11	
6001	HOTEL	140	8	489.760	0	67.08	1	8.09	
6001	HOTEL	142	8	500.760	0	68.56	1	8.19	
6001	HOTEL	143	8	508.650	0	69.43	1	8.20	
6001	HOTEL	144	8	515.580	0	70.43	1	8.16	
6001	HOTEL	145	8	522.680	0	71.23	1	8.13	
6001	HOTEL	146	8	529.270	0	72.05	1	8.04	
6001	HOTEL	147	8	533.480	0	72.77	1	8.10	
6002	INDIA	134	8	515.040	0	70.89	1	8.04	
6002	INDIA	135	8	522.010	0	71.77	1	8.08	
6002	INDIA	137	8	536.150	0	73.43	1	8.06	
6002	INDIA	139	8	550.280	0	75.07	1	8.11	
6002	INDIA	140	8	558.870	0	76.16	1	8.09	
6002	INDIA	141	8	564.090	0	76.77	1	8.09	
6002	INDIA	143	8	577.790	0	78.13	1	8.20	
6002	INDIA	145	8	591.820	0	79.75	1	8.13	
6002	INDIA	146	8	598.400	0	80.89	1	8.04	
6002	INDIA	147	8	602.580	0	81.15	1	8.10	
6004	KILO	140	8	705.120	0	94.35	1	8.09	
6004	KILO	141	8	710.350	0	95.10	1	8.09	
6004	KILO	145	8	738.060	0	97.90	1	8.13	

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
[illegible]004	KILO	146	8	744.640	0	98.45	1	8.04	
[illegible]	LIMA	126	8	157.330	0	26.26	1		
[illegible]	LIMA	132	8	44.420	0	7.55	1	6.13	
6005	LIMA	133	8	51.070	0	8.85	1	6.13	
[illegible]	LIMA	134	8	58.140	0	9.81	1	6.08	
[illegible]	LIMA	135	8	65.000	0	10.99	1	6.09	
[illegible]	LIMA	136	8	71.980	0	12.41	1	6.19	
6005	LIMA	138	8	86.110	0	14.72	1	6.16	
6005	LIMA	139	8	92.960	0	15.80	1	6.27	
6005	LIMA	142	8	113.090	0	19.13	1		
6005	LIMA	143	8	120.330	0	20.36	1		
6005	LIMA	144	8	127.210	0	21.06	1		
6005	LIMA	145	8	134.340	0	22.71	1		
6005	LIMA	146	8	140.900	0	23.83	1		
6005	LIMA	147	8	144.990	0	24.50	1		
6006	PAPA	134	8	719.900	0	96.31	1	8.04	
6006	PAPA	135	8	726. 70	0	97.11	1	8.08	
6006	PAPA	136	8	733. 90	0	97.75	1	8.12	
6006	PAPA	137	8	741.030	0	99.35	1	8.06	
6006	PAPA	138	8	748.250	0	99.76	1	8.11	
6006	PAPA	139	8	755.160	0	100.40	1	8.11	
6006	PAPA	140	8	763.770	0	101.08	1	8.09	
6006	PAPA	141	8	768.990	0	102.14	1	8.09	
6006	PAPA	145	8	796.690	0	105.20	1	8.13	
6006	PAPA	146	8	796.690	0	106.51	1	8.04	
6006	PAPA	147	8	807.510	0	106.96	1	8.10	
6007	QUEBEC	132	8	118.070	0	19.57	1	6.13	
6007	QUEBEC	133	8	124.870	0	20.88	1	6.13	
6007	QUEBEC	134	8	132.200	0	21.99	1	6.08	
6007	QUEBEC	135	8	139.160	0	23.16	1	6.09	
6007	QUEBEC	136	8	146.280	0	24.42	1	6.19	
6007	QUEBEC	138	8	160.540	0	26.81	1	6.16	
6007	QUEBEC	139	8	167.400	0	27.75	1	6.27	
6007	QUEBEC	140	8	176.060	0	28.69	1		
6007	QUEBEC	141	8	181.290	0	29.60	1	8.09	
6007	QUEBEC	142	8	187.760	0	30.22	1	8.19	
6007	QUEBEC	144	8	201.890	0	31.81	1	8.16	
6007	QUEBEC	145	8	208.990	0	32.51	1	8.13	
6007	QUEBEC	146	8	215.570	0	33.45	1	8.04	
6008	ROMEO	126	8	313.690	0	46.01	1		
6008	ROMEO	132	8	199.800	0	31.65	1	8.13	
6008	ROMEO	133	8	206.600	0	33.01	1	8.20	
6008	ROMEO	134	8	213.910	0	33.65	1	8.04	
6008	ROMEO	135	8	220.870	0	34.55	1	8.08	
6008	ROMEO	136	8	227.980	0	35.46	1	8.12	
6008	ROMEO	137	8	235.010	0	36.39	1	8.06	
6008	ROMEO	138	8	242.230	0	37.34	1	8.11	
6008	ROMEO	139	8	249.140	0	38.08	1	8.11	
6008	ROMEO	140	8	257.730	0	38.94	1	8.09	
6008	ROMEO	141	8	262.950	0	39.56	1	8.09	

SOUTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6008	ROMEO	142	8	269.420	0	40.62	1	8.19	
6008	ROMEO	143	8	276.640	0	41.31	1	8.20	
6008	ROMEO	144	8	283.560	0	42.56	1	8.16	
6008	ROMEO	145	8	290.670	0	42.91	1	8.13	
6008	ROMEO	147	8	301.440	0	44.47	1	8.10	
6009	SIERRA	132	8	273.410	0	40.76	1	8.13	
6009	SIERRA	133	8	280.210	0	41.48	1	8.20	
6009	SIERRA	134	8	287.520	0	42.52	1	8.04	
6009	SIERRA	135	8	294.490	0	43.55	1	8.08	
6009	SIERRA	136	8	301.590	0	44.48	1	8.12	
6009	SIERRA	137	8	308.630	0	45.62	1	8.06	
6009	SIERRA	138	8	315.850	0	46.37	1	8.11	
6009	SIERRA	139	8	322.760	0	46.96	1	8.11	
6009	SIERRA	140	8	331.340	0	47.83	1	8.09	
6009	SIERRA	141	8	336.570	0	48.72	1	8.09	
6009	SIERRA	142	8	343.040	0	49.28	1	8.19	
6009	SIERRA	143	8	350.260	0	50.31	1	8.20	
6009	SIERRA	145	8	364.290	0	51.71	1	8.13	
6009	SIERRA	146	8	370.880	0	52.92	1	8.04	
6009	SIERRA	147	8	375.060	0	53.24	1	8.10	
6010	TANGO	132	8	348.320	0	49.30	1		EARLY
6010	TANGO	133	8	355.120	0	50.22	1		EARLY
6010	TANGO	134	8	362.440	0	51.08	1		EARLY
6010	TANGO	135	8	369.410	0	51.94	1		EARLY
6010	TANGO	136	8	376.520	0	52.85	1		EARLY
6010	TANGO	137	8	383.560	0	54.33	1		EARLY
6010	TANGO	138	8	390.790	0	54.54	1		EARLY
6010	TANGO	139	8	397.700	0	55.70	1		EARLY
6010	TANGO	140	8	406.300	0	56.41	1		EARLY
6010	TANGO	142	8	418.000	0	57.72	1		EARLY
6010	TANGO	143	8	425.210	0	58.46	1		EARLY
6010	TANGO	144	8	432.140	0	59.42	1		EARLY
6010	TANGO	145	8	439.240	0	60.00	1		EARLY

NORTHERN PROFILES: SEA STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1332	BOUY	303	8	54.078	0	11.50	1		
1332	BOUY	304	8	45.572	0	10.30	1		
1332	BOUY	305	8	39.169	0	9.30	1		
1332	BOUY	306	8	31.907	0	8.34	1		
1332	BOUY	307	8	25.387	0	7.30	1		
1332	BOUY	308	8	17.043	0	5.59	1		
1332	BOUY	309	8	30.055	0	8.05	1		
1332	BOUY	310	8	22.156	0	6.65	1		
1332	BOUY	311	8	15.502	0	5.30	1		
1332	BOUY	312	8	7.484	0	3.27	1		
1332	BOUY	314	8	6.610	0	3.04	1		
1332	BOUY	315	8	13.190	0	4.75	1		
1332	BOUY	316	8	20.837	0	6.29	1		
1332	BOUY	409	8	3.290	0	1.79	1		
1332	BOUY	410	8	4.031	0	2.11	1		
1332	BOUY	411	8	10.937	0	4.30	1		
1333	BOUY	309	8	33.138	0	8.78	1		
1333	BOUY	310	8	25.179	0	7.38	1		
1333	BOUY	311	8	18.540	0	6.00	1		
1333	BOUY	312	8	10.567	0	4.30	1		
1333	BOUY	313	8	3.512	0	1.88	1		
1333	BOUY	314	8	3.661	0	1.98	1		
1333	BOUY	315	8	10.226	0	4.07	1		
1333	BOUY	316	8	17.814	0	5.75	1		
1333	BOUY	406	8	20.926	0	6.42	1		
1333	BOUY	408	8	12.686	0	4.68	1		
1333	BOUY	409	8	6.373	0	2.97	1		
1333	BOUY	411	8	7.943	0	3.55	1		
1333	BOUY	412	8	13.427	0	4.88	1		
1334	BOUY	303	8	65.134	0	13.27	1		
1334	BOUY	304	8	56.657	0	12.12	1		
1334	BOUY	305	8	50.210	0	11.13	1		
1334	BOUY	306	8	42.934	0	10.18	1		
1334	BOUY	307	8	36.353	0	9.26	1		
1334	BOUY	308	8	27.921	0	7.83	1		
1334	BOUY	309	8	40.903	0	9.90	1		
1334	BOUY	310	8	32.960	0	8.80	1		
1334	BOUY	311	8	26.365	0	7.54	1		
1334	BOUY	312	8	18.466	0	5.88	1		
1334	BOUY	313	8	11.530	0	4.39	1		
1334	BOUY	314	8	4.594	0	2.42	1		
1334	BOUY	315	8	2.238	0	1.27	1		
1334	BOUY	316	8	9.796	0	4.07	1		
1334	BOUY	406	8	28.706	0	8.04	1		
1334	BOUY	407	8	24.171	0	7.09	1		
1334	BOUY	408	8	20.555	0	6.24	1		
1334	BOUY	410	8	7.114	0	3.20	1		
1334	BOUY	412	8	5.558	0	2.77	1		
1336	BOUY	310	8	5.780	0	2.64	1		
1336	BOUY	311	8	12.241	0	4.70	1		

NORTHERN PROFILES: SEA STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1336	BOUY	312	8	20.214	0	6.35	1		
1336	BOUY	313	8	27.165	0	7.62	1		
1336	BOUY	314	8	34.190	0	8.79	1		
1336	BOUY	315	8	40.903	0	9.78	1		
1336	BOUY	316	8	48.506	0	11.06	1		
1336	BOUY	406	8	9.752	0	4.10	1		
1336	BOUY	407	8	14.450	0	5.15	1		
1336	BOUY	408	8	17.932	0	5.87	1		
1336	BOUY	409	8	24.423	0	7.17	1		
1336	BOUY	410	8	31.493	0	8.37	1		
1336	BOUY	411	8	38.517	0	9.43	1		
1356	BOUY	338	8	21.237	0	6.56	1		
1356	BOUY	340	8	20.511	0	6.73	1		
1356	BOUY	341	8	40.029	0	9.34	1		
1356	BOUY	343	8	62.022	0	12.86	1		
1356	BOUY	350	8	124.281	0	22.25	1		
1356	BOUY	451	8	18.406	0	6.02	1		
1356	BOUY	462	8	14.998	0	5.37	1		
1356	BOUY	463	8	11.945	0	4.89	1		
1356	BOUY	464	8	8.655	0	3.75	1		
1356	BOUY	465	8	5.572	0	2.83	1		
1356	BOUY	466	8	3.201	0	1.80	1		
1356	BOUY	467	8	3.675	0	2.01	1		
1356	BOUY	468	8	7.573	0	3.49	1		
1356	BOUY	469	8	11.515	0	4.82	1		
1356	BOUY	470	8	14.983	0	5.96	1		
1356	BOUY	471	8	15.724	0	5.47	1		
1356	BOUY	472	8	24.112	0	7.25	1		
1356	BOUY	473	8	28.232	0	7.84	1		
1356	BOUY	507	8	115.952	0	21.09	1		
1356	BOUY	508	8	113.655	0	20.77	1		
1356	BOUY	509	8	111.506	0	20.54	1		
1356	BOUY	511	8	99.635	0	18.60	1		
1356	BOUY	512	8	97.249	0	18.42	1		
1356	BOUY	514	8	93.025	0	18.12	1		
1356	BOUY	515	8	90.802	0	17.68	1		
1356	BOUY	516	8	88.950	0	17.37	1		
1356	BOUY	518	8	86.504	0	17.28	1		
1356	BOUY	519	8	89.720	0	17.31	1		
1356	BOUY	520	8	92.951	0	17.75	1		
1356	BOUY	522	8	99.264	0	18.69	1		
1356	BOUY	523	8	102.362	0	19.04	1		
1359	BOUY	338	8	35.983	0	9.17	1		
1359	BOUY	340	8	5.646	0	2.77	1		
1359	BOUY	341	8	24.972	0	7.04	1		
1359	BOUY	343	8	46.920	0	10.46	1		
1359	BOUY	344	8	144.510	0	25.43	1		
1359	BOUY	345	8	165.139	0	28.10	1		
1359	BOUY	350	8	139.278	0	24.57	1		
1359	BOUY	354	8	91.543	0	17.53	1		

NORTHERN PROFILES: SEA STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1359	BOUY	355	8	72.159	0	14.70	1		
1359	BOUY	461	8	33.241	0	9.02	1		
1359	BOUY	463	8	26.750	0	7.97	1		
1359	BOUY	464	8	23.401	0	7.46	1		
1359	BOUY	465	8	20.204	0	6.70	1		
1359	BOUY	466	8	17.058	0	6.16	1		
1359	BOUY	467	8	11.234	0	4.77	1		
1359	BOUY	468	8	7.321	0	3.35	1		
1359	BOUY	469	8	3.646	0	2.09	1		
1359	BOUY	470	8	1.275	0	0.81	1		
1359	BOUY	472	8	9.114	0	4.02	1		
1359	BOUY	473	8	13.205	0	4.96	1		
1359	BOUY	474	8	17.325	0	5.97	1		
1359	BOUY	475	8	21.282	0	6.74	1		
1359	BOUY	476	8	27.239	0	7.66	1		
1359	BOUY	477	8	35.538	0	8.89	1		
1359	BOUY	478	8	39.436	0	9.49	1		
1359	BOUY	479	8	43.971	0	10.04	1		
1359	BOUY	524	8	87.231	0	17.23	1		
1359	BOUY	525	8	85.200	0	16.74	1		
1359	BOUY	526	8	83.125	0	16.42	1		
1359	BOUY	527	8	81.125	0	16.15	1		
1362	BOUY	338	8	65.104	0	13.89	1		
1362	BOUY	340	8	106.363	0	19.68	1		
1362	BOUY	341	8	126.089	0	22.13	1		
1362	BOUY	343	8	147.948	0	24.76	1		
1362	BOUY	344	8	43.497	0	10.51	1		
1362	BOUY	345	8	63.133	0	13.56	1		
1362	BOUY	346	8	85.096	0	17.05	1		
1362	BOUY	346	8	85.096	0	18.14	2		
1362	BOUY	347	8	101.443	0	19.52	1		
1362	BOUY	347	8	101.443	0	20.22	2		
1362	BOUY	348	8	124.740	0	22.78	1		
1362	BOUY	348	8	124.740	0	23.29	2		
1362	BOUY	349	8	140.731	0	25.27	1		
1362	BOUY	461	8	67.742	0	14.38	1		
1362	BOUY	462	8	70.943	0	14.81	1		
1362	BOUY	463	8	74.130	0	15.37	1		
1362	BOUY	464	8	77.227	0	15.64	1		
1363	BOUY	338	8	98.849	0	18.79	1		
1363	BOUY	340	8	140.153	0	24.48	1		
1363	BOUY	341	8	159.819	0	26.40	1		
1363	BOUY	342	8	181.308	0	29.09	1		
1363	BOUY	343	8	181.752	0	29.08	1		
1363	BOUY	344	8	9.811	0	3.95	1		
1363	BOUY	345	8	29.566	0	8.18	1		
1363	BOUY	346	8	51.766	0	11.82	1		
1363	BOUY	347	8	67.713	0	14.77	1		
1363	BOUY	348	8	90.995	0	19.31	1		
1363	BOUY	349	8	106.986	0	21.08	1		

NORTHERN PROFILES: SEA STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1363	BOUY	462	8	104.659	0	19.54	1		
1363	BOUY	463	8	107.860	0	20.00	1		
1363	BOUY	464	8	110.957	0	20.39	1		
1363	BOUY	466	8	117.374	0	21.39	1		
1363	BOUY	467	8	123.065	0	22.00	1		
1363	BOUY	468	8	127.067	0	23.02	1		
1363	BOUY	469	8	130.890	0	23.77	1		
1363	BOUY	480	8	15.220	0	5.35	1		
1363	BOUY	481	8	17.384	0	5.93	1		
1363	BOUY	482	8	19.992	0	6.36	1		
1363	BOUY	483	8	22.289	0	6.87	1		
1363	BOUY	484	8	24.735	0	7.3	1		
1363	BOUY	485	8	27.121	0	7.73	1		
1363	BOUY	486	8	33.389	0	8.66	1		
1363	BOUY	488	8	38.799	0	10.14	1		
1363	BOUY	489	8	41.170	0	10.77	1		
1363	BOUY	490	8	43.571	0	11.20	1		
1363	BOUY	491	8	45.927	0	11.31	1		
1363	BOUY	493	8	62.718	0	13.98	1		
1363	BOUY	494	8	64.897	0	14.30	1		
1363	BOUY	496	8	71.907	0	15.68	1		
1363	BOUY	497	8	75.893	0	16.10	1		
1363	BOUY	500	8	84.489	0	19.22	1		
1365	BOUY	338	8	148.956	0	24.94	1		
1365	BOUY	340	8	188.451	0	29.47	1		
1365	BOUY	341	8	207.42.	0	32.04	1		
1365	BOUY	342	8	228.213	0	34.48	1		
1365	BOUY	343	8	228.139	0	34.56	1		
1366	BOUY	338	8	161.242	0	27.72	1		
1366	BOUY	340	8	203.241	0	32.34	1		
1366	BOUY	341	8	223.337	0	34.04	1		
1366	BOUY	342	8	245.390	0	36.40	1		
1366	BOUY	343	8	245.831	0	36.51	1		
1366	BOUY	344	8	53.382	0	12.01	1		
1366	BOUY	345	8	34.056	0	8.94	1		
1366	BOUY	346	8	15.072	0	5.07	1		
1366	BOUY	347	8	5.068	0	2.37	1		
1366	BOUY	348	8	27.788	0	7.87	1		
1366	BOUY	349	8	43.600	0	10.48	1		
1366	BOUY	480	8	47.928	0	11.11	1		
1366	BOUY	481	8	45.557	0	10.77	1		
1366	BOUY	482	8	43.185	0	10.29	1		
1366	BOUY	483	8	40.755	0	9.94	1		
1366	BOUY	484	8	38.458	0	9.71	1		
1366	BOUY	485	8	36.087	0	9.24	1		
1366	BOUY	486	8	29.981	0	8.05	1		
1366	BOUY	488	8	25.150	0	7.28	1		
1366	BOUY	489	8	22.808	0	6.86	1		
1366	BOUY	490	8	20.526	0	6.38	1		
1366	BOUY	491	8	18.229	0	5.89	1		

NORTHERN PROFILES: SEA STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1366	BOUY	492	8	8.993	0	4.16	1		
1366	BOUY	493	8	5.795	0	2.74	1		
1366	BOUY	494	8	5.187	0	2.54	1		
1366	BOUY	496	8	9.040	0	3.65	1		
1366	BOUY	497	8	12.923	0	4.59	1		
1366	BOUY	498	8	14.939	0	5.06	1		
1366	BOUY	499	8	18.910	0	5.93	1		
1366	BOUY	500	8	22.912	0	6.83	1		
1366	BOUY	501	8	34.071	0	8.90	1		
1366	BOUY	502	8	37.835	0	9.75	1		
1366	BOUY	503	8	42.963	0	10.27	1		
1366	BOUY	504	8	45.423	0	10.86	1		
SOUTHWEST CENTER FOR ADVANCED STUDIES (GRADUATE RESEARCH CENTER)									
2329	GRCSEA	303	7	3.192	0	1.59	1		
2329	GRCSEA	304	7	5.717	0	2.79	1		
2329	GRCSEA	305	7	12.117	0	4.33	1		
2329	GRCSEA	306	7	19.468	0	5.62	1		
2329	GRCSEA	307	7	25.928	0	6.86	1		
2329	GRCSEA	308	7	34.452	0	8.29	1		
2329	GRCSEA	309	7	21.784	0	6.12	1		
2329	GRCSEA	310	7	29.536	0	7.54	1		
2329	GRCSEA	311	7	36.115	0	8.54	1		
2329	GRCSEA	312	7	44.104	0	10.00	1		
2329	GRCSEA	313	7	51.143	0	11.18	1		
2329	GRCSEA	314	7	58.212	0	12.06	1		
2329	GRCSEA	315	7	64.953	0	13.16	1		
2329	GRCSEA	316	7	72.646	0	14.48	1		
2330	GRCSEA	309	7	10.825	0	4.28	1		
2330	GRCSEA	310	7	18.681	0	5.86	1		
2330	GRCSEA	311	7	24.962	0	6.92	1		
2330	GRCSEA	312	7	33.457	0	8.31	1		
2330	GRCSEA	313	7	40.451	0	9.39	1		
2330	GRCSEA	314	7	47.356	0	10.63	1		
2330	GRCSEA	315	7	54.128	0	11.53	1		
2330	GRCSEA	316	7	61.776	0	11.76	1		
2330	GRCSEA	320	7	74.175	0	14.59	1		
2335	GRCSEA	303	7	82.699	0	16.09	1		
2335	GRCSEA	304	7	74.101	0	14.77	1		
2335	GRCSEA	305	7	67.716	0	13.78	1		
2335	GRCSEA	306	7	60.424	0	12 82	1		
2335	GRCSEA	307	7	53.994	0	11.91	1		
2335	GRCSEA	308	7	45.723	0	10.72	1		
2335	GRCSEA	310	7	50.014	0	11.40	1		
2335	GRCSEA	312	7	35.046	0	9.24	1		
2335	GRCSEA	313	7	28.111	0	7.87	1		
2335	GRCSEA	314	7	20.849	0	6.33	1		
2335	GRCSEA	315	7	14.033	0	4.95	1		
2335	GRCSEA	316	7	7.053	0	3.20	1		
2335	GRCSEA	320	7	6.192	0	3.28	1		
2342	GRCSEA	327	7	22.453	0	11.37	1		
2342	GRCSEA	328	7	10.216	0	6.88	2		WH

NORTHERN PROFILES: SEA STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
2342	GRCSEA	329	7	45.708	0	14.98	1		
2342	GRCSEA	330	7	56.430	0	16.28	1		
2343	GRCSEA	327	7	10.899	0	7.34	2		WW
2343	GRCSEA	329	7	55.[illegible]	0	16.31	1		
2346	GRCSEA	331	7	5.628	0	3.79	2		WW
2346	GRCSEA	332	7	7.083	0	4.77	2		WW
2346	GRCSEA	333	7	28.675	0	12.30	1		
2346	GRCSEA	334	7	50.816	0	15.39	1		
2346	GRCSEA	335	7	72.037	0	18.01	1		
2346	GRCSEA	336	7	82.328	0	19.22	1		
2350	GRCSEA	331	7	45.129	0	14.47	1		
2350	GRCSEA	332	7	44.817	0	14.42	1		
2350	GRCSEA	333	7	23.062	0	10.78	1		
2350	GRCSEA	334	7	3.742	0	2.52	2		WW
2350	GRCSEA	335	7	20.537	0	9.56	1		
2350	GRCSEA	336	7	31.081	0	11.40	1		
2350	GRCSEA	337	7	42.545	0	12.65	1		
2353	GRCSEA	333	7	57.855	0	15.69	1		
2353	GRCSEA	334	7	35.[illegible]8	0	12.18	1		
2353	GRCSEA	335	7	14.[illegible]9	0	7.28	1		
2353	GRCSEA	336	7	3.593	0	2.42	2		WW
2353	GRCSEA	337	7	8.033	0	5.27	1		
2364	GRCSEA	344	7	25.764	0	7.59	1		
2364	GRCSEA	345	7	6.608	0	3.34	1		
2364	GRCSEA	346	7	18.280	0	5.92	1		
2364	GRCSEA	347	7	32.476	0	8.84	1		
2364	GRCSEA	350	7	31.066	0	8.72	1		
2367	GRCSEA	350	7	67.522	0	14.19	1		

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1105	TIGER	303	8	37.442	0	7.84	1	6.69	
1105	TIGER	304	8	45.101	0		1		NO RECORD
1105	TIGER	305	8	51.015	0	10.04	1	6.92	
1105	TIGER	306	8	57.828	0	11.27	1	6.78	
1105	TIGER	307	8	64.064	0		1		NO RECORD
1105	TIGER	308	8	71.976	0	13.94	1	7.00	
1105	TIGER	309	8	59.618	0	11.84	1	6.69	
1105	TIGER	310	8	67.303	0	13.31	1	6.98	
1105	TIGER	311	8	74.127	0	14.39	1	7.09	
1105	TIGER	312	8	81.451	0	15.72	1	7.25	
1105	TIGER	313	8	88.182	0	16.94	1	7.07	
1105	TIGER	314	8	95.290	0	18.03	1	5.93	
1105	TIGER	315	8	101.799	0	18.88	1	6.76	
1105	TIGER	316	8	109.307	0	20.07	1	7.20	
1105	TIGER	320	8	121.745	0	21.31	1	6.97	
1105	TIGER	322	8	249.753	0	50.26	1		S/N POOR
1105	TIGER	323	8	270.306	0		1		S/N VERY POOR
1105	TIGER	324	8	291.359	0		1		S/N VERY POOR
1105	TIGER	326	8	333.191	0		1		S/N VERY POOR
1105	TIGER	327	8	301.519	0		1		S/N VERY POOR
1105	TIGER	328	8	290.940	0		1		S/N VERY POOR
1105	TIGER	329	8	236.161	0		1		S/N VERY POOR
1105	TIGER	330	8	225.051	0		1		NO RECORD
1105	TIGER	331	8	217.855	0		1		S/N VERY POOR
1105	TIGER	332	8	217.222	0		1		S/N VERY POOR
1105	TIGER	333	8	194.358	0	33.14	1	7.56	
1105	TIGER	334	8	171.711	0	30.15	1	6.60	
1105	TIGER	335	8	150.218	0	27.32	1	9.43	
1105	TIGER	336	8	139.350	0	24.78	1	6.82	
1105	TIGER	337	8	120.078	0		1		NO RECORD
1105	TIGER	338	8	112.559	0	20.39	1	7.24	
1105	TIGER	340	8	139.276	0	24.32	1	7.71	
1105	TIGER	341	8	154.423	0	25.98	1	8.34	
1105	TIGER	342	8	171.463	0	28.15	1	9.36	
1105	TIGER	343	8	171.556	0	28.16	1	9.09	
1105	TIGER	344	8	112.074	0	20.35	1		
1105	TIGER	345	8	118.203	0	21.30	1	6.65	
1105	TIGER	346	8	128.992	0	22.89	1	5.95	
1105	TIGER	347	8	145.855	0	25.37	1	6.31	
1105	TIGER	348	8	163.655	0	27.92	1	6.31	
1105	TIGER	349	8	177.348	0	29.57	1	6.44	
1105	TIGER	350	8	107.706	0	19.69	1	6.60	
1105	TIGER	353	8	104.529	0	19.23	1	6.53	
1105	TIGER	354	8	101.943	0	19.31	1	7.50	
1105	TIGER	355	8	105.229	0	19.34	1	7.06	
1105	TIGER	356	8	59.317	0		1		NO RECORD
1106	GAMMA	303	8	71.842	0	13.49	1		
1106	GAMMA	304	8	80.216	0	14.95	1		
1106	GAMMA	305	8	86.588	0	16.17	1		
1106	GAMMA	306	8	93.909	0	17.26	1		

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1106	GAMMA	307	8	100.453	0	18.36	1		
1106	GAMMA	308	8	108.902	0	19.89	1		
1106	GAMMA	309	8	95.926	0	17.78	1		
1106	GAMMA	310	8	103.854	0		1		S/N POOR
1106	GAMMA	311	8	110.428	0	20.08	1		
1106	GAMMA	312	8	118.462	0	21.40	1		
1106	GAMMA	313	8	125.475	0	22.55	1		
1106	GAMMA	314	8	132.456	0	23.43	1		
1106	GAMMA	315	8	139.171	0	24.29	1		
1106	GAMMA	316	8	146.791	0		1		S/N POOR
1106	GAMMA	320	8	159.281	0	27.41	1		MAY NOT BE 1ST ARR
1106	GAMMA	322	8	268.454	0		1		
1106	GAMMA	323	8	308.605	0	49.00	1		ERROR EST ABOUT 1SEC
1106	GAMMA	324	8	329.911	0		1		S/N POOR
1106	GAMMA	326	8	372.176	0	56.50	1		
1106	GAMMA	327	8	240.144	0		1		S/N POOR
1106	GAMMA	328	8	329.434	0	51.20	1		
1106	GAMMA	329	8	274.491	0	44.54	1		
1106	GAMMA	330	8	263.525	0	43.42	1		
1106	GAMMA	331	8	256.084	0		1		S/N POOR
1106	GAMMA	332	8	255.394	0	42.43	1		
1106	GAMMA	333	8	232.371	0	39.44	1		MAY NOT BE 1ST ARR
1106	GAMMA	334	8	209.583	0	35.73	1		MAY NOT BE 1ST ARR
1106	GAMMA	335	8	187.990	0	31.50	1		MAY NOT BE 1ST ARR
1106	GAMMA	336	8	177.178	0		1		S/N POOR
1106	GAMMA	337	8	165.591	0	28.26	1		
1106	GAMMA	338	8	140.733	0	24.16	1		
1106	GAMMA	340	8	156.826	0		1		NO RECORD
1106	GAMMA	341	8	167.579	0	27.70	1		
1106	GAMMA	342	8	180.612	0	29.57	1		
1106	GAMMA	343	8	180.505	0	29.76	1		
1106	GAMMA	344	8	159.179	0	27.24	1		
1106	GAMMA	345	8	165.355	0	28.41	1		
1106	GAMMA	346	8	175.329	0	22.33	1		
1106	GAMMA	347	8	191.719	0		1		NO RECORD
1106	GAMMA	348	8	208.357	0	34.47	1		
1106	GAMMA	349	8	221.400	0	36.51	1		
1106	GAMMA	350	8	154.701	0	26.64	1		
1106	GAMMA	353	8	150.170	0	25.98	1		
1106	GAMMA	354	8	143.694	0	25.11	1		
1106	GAMMA	355	8	142.765	0	24.78	1		
1106	GAMMA	356	8	78.924	0	15.49	1		
1107	HOTEL	303	8	103.639	0	18.95	1		
1107	HOTEL	304	8	112.036	0	20.31	1		
1107	HOTEL	305	8	118.418	0	21.19	1		
1107	HOTEL	306	8	125.744	0	22.43	1		
1107	HOTEL	307	8	132.294	0	23.40	1		
1107	HOTEL	308	8	140.742	0	24.19	1		
1107	HOTEL	309	8	127.760	0	22.83	1		
1107	HOTEL	310	8	135.696	0	24.00	1		

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1107	HOTEL	311	8	142.284	0	24.94	1		
1107	HOTEL	312	8	150.312	0	26.20	1		
1107	HOTEL	313	8	157.324	0	27.35	2		FIRST ARR NOT CLEAR
1107	HOTEL	314	8	164.313	0	28.32	2		FIRST ARR NOT CLEAR
1107	HOTEL	315	8	171.028	0	29.20	2		FIRST ARR NOT CLEAR
1107	HOTEL	316	8	178.649	0	28.99	2		FIRST ARR NOT CLEAR
1107	HOTEL	320	8	191.142	0	32.25	2		FIRST ARR NOT CLEAR
1107	HOTEL	322	8	320.015	0		1		S/N RATIO VERY POOR
1107	HOTEL	323	8	340.464	0		1		S/N RATIO VERY POOR
1107	HOTEL	324	8	361.772	0		1		S/N RATIO VERY POOR
1107	HOTEL	326	8	404.038	0		1		S/N RATIO VERY POOR
1107	HOTEL	327	8	372.005	0		1		S/N RATIO VERY POOR
1107	HOTEL	328	8	361.355	0		1		S/N RATIO VERY POOR
1107	HOTEL	329	8	306.353	0		1		S/N RATIO VERY POOR
1107	HOTEL	330	8	295.390	0		1		S/N RATIO VERY POOR
1107	HOTEL	331	8	287.945	0		1		S/N RATIO VERY POOR
1107	HOTEL	332	8	287.255	0		1		S/N RATIO VERY POOR
1107	HOTEL	333	8	264.232	0		1		S/N RATIO VERY POOR
1107	HOTEL	334	8	241.445	0	40.66	2		FIRST ARR NOT CLEAR
1107	HOTEL	335	8	219.851	0	35.39	2		FIRST ARR NOT CLEAR
1107	HOTEL	336	8	209.039	0	35.08	2		FIRST ARR NOT CLEAR
1107	HOTEL	337	8	197.453	0	33.13	2		FIRST ARR NOT CLEAR
1107	HOTEL	338	8	171.948	0	28.03	1		
1107	HOTEL	340	8	185.672	0	30.12	1		
1107	HOTEL	341	8	194.950	0	31.11	1		
1107	HOTEL	342	8	206.365	0	32.54	1		
1107	HOTEL	343	8	206.185	0	32.54	1		
1107	HOTEL	344	8	187.745	0	31.60	1		
1107	HOTEL	345	8	192.203	0	32.47	1		
1107	HOTEL	346	8	200.132	0	33.48	1		
1107	HOTEL	347	8	215.607	0	35.92	1		
1107	HOTEL	348	8	230.494	0	37.10	1		
1107	HOTEL	349	8	242.611	0	39.97	1		
1107	HOTEL	350	8	183.552	0	31.04	1		
1107	HOTEL	353	8	180.442	0	30.62	1		
1107	HOTEL	354	8	175.213	0	29.84	1		
1107	HOTEL	355	8	174.521	0	28.67	1		
1107	HOTEL	356	8	109.895	0		1		NO RECORD
1107	CHARLY	303	8	181.849	0	30.08	1		
1107	CHARLY	304	8	190.304	0	30.10	1		
1108	CHARLY	305	8	196.712	0	31.27	1		
1108	CHARLY	306	8	204.045	0	32.08	1		
1108	CHARLY	307	8	210.610	0	32.74	1		
1108	CHARLY	308	8	219.030	0	33.76	1		
1108	CHARLY	309	8	206.042	0	32.37	1		
1108	CHARLY	310	8	214.015	0	33.26	1		
1108	CHARLY	311	8	220.709	0	34.05	1		
1108	CHARLY	312	8	228.657	0	35.34	1		
1108	CHARLY	313	8	235.655	0	39.11	2		FIRST ARR NOT CLEAR
1108	CHARLY	314	8	242.712	0	39.81	2		FIRST ARR NOT CLEAR

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
1108	CHARLY	315	8	249.417	0	40.80	2		FIRST ARR NOT CLEAR
1108	CHARLY	316	8	257.048	0	42.05	1		
1108	CHARLY	320	8	269.580	0	44.11	2		FIRST ARR NOT CLEAR
1108	CHARLY	322	8	398.490	0	60.12	1		
1108	CHARLY	323	8	418.990	0	62.37	1		
1108	CHARLY	324	8	440.242	0	65.58	1		
1108	CHARLY	326	8	482.398	0	69.19	1		
1108	CHARLY	327	8	450.461	0	64.72	1		
1108	CHARLY	328	8	439.824	0	63.11	1		
1108	CHARLY	329	8	384.832	0	56.75	1		
1108	CHARLY	330	8	373.812	0	56.12	1		
1108	CHARLY	331	8	366.429	0		1		S/N VERY POOR
1108	CHARLY	332	8	365.754	0		1		S/N VERY POOR
1108	CHARLY	333	8	342.737	0	55.44	2		FIRST ARR NOT CLEAR
1108	CHARLY	334	8	319.943	0	52.44	2		FIRST ARR NOT CLEAR
1108	CHARLY	335	8	298.324	0	44.40	2		FIRST ARR NOT CLEAR
1108	CHARLY	336	8	287.466	0	46.60	2		FIRST ARR NOT CLEAR
1108	CHARLY	337	8	275.919	0	44.28	2		FIRST ARR NOT CLEAR
1108	CHARLY	338	8	251.135	0	37.09	1		
1108	CHARLY	340	8	263.238	0	39.00	1		
1108	CHARLY	341	8	270.978	0	39.50	1		
1108	CHARLY	342	8	280.429	0	41.05	1		
1108	CHARLY	343	8	280.164	0	40.90	1		
1108	CHARLY	344	8	257.763	0	38.67	1		
1108	CHARLY	345	8	258.633	0	39.38	1		
1108	CHARLY	346	8	262.223	0	38.81	1		
1108	CHARLY	347	8	275.314	0	37.52	1		
1108	CHARLY	348	8	286.054	0	41.83	1		
1108	CHARLY	349	8	295.791	0	43.33	1		
1108	CHARLY	350	8	254.239	0	41.78	1		
1108	CHARLY	353	8	254.203	0	41.64	1		FIRST TROUGH
1108	CHARLY	354	8	252.120	0	38.38	1		
1108	CHARLY	355	8	252.989	0	41.14	1		
1108	CHARLY	356	8	189.057	0				NO RECORD
SOUTHWEST CENTER FOR ADVANCED STUDIES (GRADUATE RESEARCH CENTER)									
2150	SLVA4E	303	9	29.330	0	6.54	1	5.80	GOOD ONSET
2150	SLVA4E	304	9	37.060	0	8.09	1	6.40	GOOD ONSET
2150	SLVA4E	305	9	43.110	0	9.08	1	6.50	GOOD ONSET
2150	SLVA4E	307	9	56.360	0	11.49	1	6.90	GOOD ONSET
2150	SLVA4E	308	9	64.390	0	12.82	1	6.10	GOOD ONSET
2150	SLVA4E	309	9	51.840	0	10.68	1	6.00	GOOD ONSET
2150	SLVA4E	311	9	66.460	0	13.08	1	6.60	GOOD ONSET
2150	SLVA4E	312	9	73.930	0	14.39	1	6.80	GOOD ONSET
2150	SLVA4E	313	9	80.730	0	15.55	1	7.70	GOOD ONSET
2150	SLVA4E	314	9	87.860	0	16.67	1	8.10	GOOD ONSET
2150	SLVA4E	315	9	94.410	0	17.52	1	6.90	GOOD ONSET
2150	SLVA4E	316	9	101.960	0	18.90	1	7.40	GOOD ONSET
2150	SLVA4E	320	9	114.450	0	20.78	1	7.60	GOOD ONSET
2150	SLVA4E	329	9	229.170	0	39.00	1	7.90	NOISY
2150	SLVA4E	333	9	187.260	0	32.58	1		WEAK SIGNAL
2150	SLVA4E	334	9	164.580	0	29.28	1	7.80	WEAK SIGNAL

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
2150	SLVA4E	335	9	143.020	0	25.85	1	7.00	GOOD ONSET
2150	SLVA4E	336	9	132.150	0	23.89	1	6.40	GOOD ONSET
2150	SLVA4E	337	9	120.790	0	21.91	1	8.80	GOOD ONSET
2150	SLVA4E	338	9	104.470	0	19.10	1	6.80	GOOD ONSET
2150	SLVA4E	340	9	131.210	0	23.30	1		WEAK SIGNAL
2150	SLVA4E	341	9	146.470	0	25.00	1	8.20	VERY WEAK
2150	SLVA4E	342	9	163.680	0	27.21	1		NOT FIRST?
2150	SLVA4E	343	9	163.790	0	27.34	1		GOOD ONSET
2150	SLVA4E	344	9	108.770	0	19.86	1	8.20	GOOD ONSET
2150	SLVA4E	345	9	116.160	0	21.06	1		NOT FIRST?
2150	SLVA4E	346	9	128.190	0	22.93	1	5.80	GOOD ONSET
2150	SLVA4E	347	9	145.420	0	25.48	1	5.90	GOOD ONSET
2150	SLVA4E	348	9	163.960	0	28.05	1	5.50	MODERATE AMPL
2150	SLVA4E	349	9	177.980	0	30.04	1	6.60	WEAK SIGNAL
2150	SLVA4E	350	9	104.150	0	19.00	1	6.80	GOOD ONSET
2150	SLVA4E	353	9	99.630	0	18.54	1	6.40	GOOD ONSET
2150	SLVA4E	354	9	95.460	0	17.88	1	5.20	GOOD ONSET
2150	SLVA4E	355	9	97.890	0	18.30	1	5.70	GOOD ONSET
2150	SLVA4E	356	9	51.500	0	11.26	1	6.30	GOOD ONSET
2150	SLVA4E	603	9	85.130	0	15.41	1	7.30	DISTORTED SIGNAL
2150	SLVA4E	604	9	85.580	0	15.43	1	7.60	DISTORTED SIGNAL
2150	SLVA4E	607	9	104.100	0	18.87	1	7.00	NOT FIRST?
2150	SLVA4E	608	9	104.100	0	18.51	1		WEAK SIGNAL
2160	WTHM4E	303	9	36.710	0	7.79	1	5.40	GOOD ONSET
2160	WTHM4E	304	9	45.120	0	9.47	1	6.00	GOOD ONSET
2160	WTHM4E	305	9	51.500	0	10.50	1	6.70	GOOD ONSET
2160	WTHM4E	306	9	58.800	0	11.80	1	6.10	GOOD ONSET
2160	WTHM4E	307	9	65.330	0	12.94	1	5.90	GOOD ONSET
2160	WTHM4E	308	9	73.670	0	14.38	1	6.70	NOISY
2160	WTHM4E	309	9	60.750	0	12.13	1	5.50	GOOD ONSET
2160	WTHM4E	310	9	68.730	0	13.53	1	7.50	GOOD ONSET
2160	WTHM4E	311	9	75.480	0	14.81	1	7.50	GOOD ONSET
2160	WTHM4E	312	9	83.340	0	16.17	1	7.20	GOOD ONSET
2160	WTHM4E	313	9	90.300	0	17.04	1	6.90	GOOD ONSET
2160	WTHM4E	314	9	97.400	0	18.26	1		NOISY
2160	WTHM4E	315	9	104.070	0	19.20	1	8.10	GOOD ONSET
2160	WTHM4E	316	9	111.700	0	20.24	1	6.00	GOOD ONSET
2160	WTHM4E	320	9	124.240	0	22.20	1		WEAK SIGNAL
2160	WTHM4E	330	9	228.360	0	38.61	1	6.90	WEAK SIGNAL
2160	WTHM4E	333	9	197.360	0	34.03	1	6.90	MODERATE AMPL
2160	WTHM4E	334	9	174.580	0	30.73	1		WEAK SIGNAL
2160	WTHM4E	336	9	142.090	0	25.27	1		WEAK SIGNAL
2160	WTHM4E	337	9	130.600	0	23.29	1		WEAK SIGNAL
2167	WTHM4W	340	9	134.390	0	23.79	1		GOOD ONSET
2167	WTHM4W	341	9	148.190	0	25.20	1		WEAK SIGNAL
2167	WTHM4W	342	9	164.120	0	27.25	1		NOISY
2167	WTHM4W	343	9	164.150	0	27.29	1		GOOD ONSET
2167	WTHM4W	344	9	123.980	0	22.24	1		GOOD ONSET
2167	WTHM4W	345	9	131.400	0	23.51	1		GOOD ONSET
2167	WTHM4W	346	9	143.110	0	25.19	1		GOOD ONSET

NORTHERN PROFILES: LAND STATIONS

STATION NO	STATION NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
2167	WTHM4W	347	9	160.200	0	27.68	1		NOISY
2167	WTHM4W	348	9	178.350	0	30.23	1		GOOD ONSET
2167	WTHM4W	349	9	192.160	0	31.92	1		WEAK SIGNAL
2167	WTHM4W	350	9	110.340	0	21.51	1		NOISY
2160	WTHM4E	353	9	112.890	0	20.62	1		MODERATE AMPL
2160	WTHM4E	354	9	106.970	0	19.77	1	7.80	GOOD ONSET
2160	WTHM4E	355	9	107.630	0	19.77	1	6.20	GOOD ONSET
2160	WTHM4E	356	9	52.460	0	11.51	1		VERY NOISY
2167	WTHM4W	604	9	73.860	0	14.87	1	6.20	GOOD ONSET
2167	WTHM4W	607	9	91.810	0	16.78	1	6.30	NOT FIRST?
2167	WTHM4W	608	9	91.810	0	16.71	1	5.40	NOT FIRST?
2170	CHTGUE	303	9	20.260	0	5.25	1		GOOD ONSET
2170	CHTGUE	304	9	27.900	0	6.76	1		GOOD ONSET
2170	CHTGUE	305	9	33.790	0	7.72	1		GOOD ONSET
2170	CHTGUE	306	9	40.750	0	8.98	1		GOOD ONSET
2170	CHTGUE	307	9	47.090	0	10.03	1		GOOD ONSET
2170	CHTGUE	308	9	55.160	0	11.42	1		GOOD ONSET
2170	CHTGUE	309	9	42.550	0	9.34	1		GOOD ONSET
2170	CHTGUE	310	9	50.380	0	10.76	1		GOOD ONSET
2170	CHTGUE	311	9	57.220	0	11.78	1		WEAK SIGNAL
2170	CHTGUE	312	9	64.700	0	13.02	1		MODERATE AMPL
2170	CHTGUE	313	9	71.540	0	14.12	1		MODERATE AMPL
2170	CHTGUE	314	9	78.670	0	15.21	1		MODERATE AMPL
2170	CHTGUE	315	9	85.240	0	16.19	1		WEAK SIGNAL
2170	CHTGUE	316	9	92.810	0	17.63	1		GOOD ONSET
2170	CHTGUE	320	9	105.320	0	19.45	1		MODERATE AMPL
2170	CHTGUE	329	9	220.160	0	37.25	1		VERY WEAK
2170	CHTGUE	330	9	209.070	0	35.79	1		WEAK SIGNAL
2170	CHTGUE	333	9	178.220	0	31.30	1		MODERATE AMPL
2170	CHTGUE	335	9	133.940	0	24.71	1		GOOD ONSET
2170	CHTGUE	336	9	123.060	0	22.56	1		MODERATE AMPL
2170	CHTGUE	337	9	111.660	0	20.55	1		MODERATE AMPL
2170	CHTGUE	338	9	95.370	0	17.75	1		VERY WEAK
2170	CHTGUE	340	9	122.940	0	22.34	1		NOISY
2170	CHTGUE	341	9	138.660	0	24.19	1		VERY WEAK
2170	CHTGUE	342	9	156.280	0	27.05	1		VERY WEAK
2170	CHTGUE	343	9	156.400	0	26.53	1		WEAK SIGNAL
2170	CHTGUE	344	9	103.040	0	19.02	1		STRONG SIGNAL
2170	CHTGUE	345	9	111.730	0	21.48	1		VERY WEAK
2170	CHTGUE	346	9	125.020	0	22.35	1		VERY WEAK
2170	CHTGUE	347	9	142.590	0	25.23	1		WEAK SIGNAL
2170	CHTGUE	348	9	161.900	0	27.81	1		MODERATE AMPL
2170	CHTGUE	349	9	176.250	0	30.17	1		WEAK SIGNAL
2170	CHTGUE	350	9	98.240	0	18.34	1		STRONG SIGNAL
2170	CHTGUE	353	9	92.400	0	17.51	1		WEAK SIGNAL
2170	CHTGUE	354	9	86.840	0	16.60	1		MODERATE AMPL
2170	CHTGUE	355	9	88.730	0	17.21	1		NOISY
2180	SWLFLS	308	9	446.490	0	63.19	1		GOOD ONSET
2180	SWLFLS	309	9	433.500	0	61.77	1		NOISY
2180	SWLFLS	310	9	441.470	0	62.52	1		NOISY

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
2180	SWLFLS	311	9	448.160	0	63.39	1		NOISY
2180	SWLFLS	312	9	456.120	0	64.28	1		WEAK SIGNAL
2180	SWLFLS	313	9	463.110	0	65.77	1		VERY NOISY
2180	SWLFLS	316	9	484.500	0	67.08	1		GOOD ONSET
2180	SWLFLS	605	9	203.100	0	32.67	1		MODERATE AMPL
2180	SWLFLS	606	9	203.100	0	32.74	1		MODERATE AMPL
2180	SWLFLS	801	9	510.730	0	70.10	1		GOOD ONSET
	UNIVERSITY OF TULSA								
3002	PLATA	303	9	168.802	1	28.58	1		PN FAIR
3002	PLATA	303	9	168.802	1	29.95	2		STRONG
3002	PLATA	304	9	177.249	1	29.37	1		PN GOOD
3002	PLATA	304	9	177.249	1	31.10	2		STRONG
3002	PLATA	305	9	183.645	1	30.50	1		PN GOOD
3002	PLATA	305	9	183.645	1	32.25	2		FAIR
3002	PLATA	306	9	190.972	1	31.71	1		PN GOOD
3002	PLATA	306	9	190.972	1	33.80	2		STRONG
3002	PLATA	307	9	197.534	1	31.88	1		PN GOOD
3002	PLATA	307	9	197.534	1	34.31	2		STRONG
3002	PLATA	308	9	205.904	1	33.28	1		PN GOOD
3002	PLATA	308	9	205.904	1	35.56	2		STRONG
3002	PLATA	309	9	192.946	1	31.67	1		PN POOR
3002	PLATA	309	9	192.946	1	32.36	0		WEAK
3002	PLATA	309	9	192.946	1	33.28	2		STRONG
3002	PLATA	309	9	192.946	1	33.52	0		STRONG
3002	PLATA	310	9	200.927	1	32.23	1		PN POOR
3002	PLATA	310	9	200.927	1	34.74	2		STRONG
3002	PLATA	311	9	207.669	1	33.30	1		PN POOR
3002	PLATA	311	9	207.669	1	36.00	2		STRONG
3002	PLATA	312	9	215.546	1	34.21	1		PN POOR
3002	PLATA	312	9	215.546	1	37.22	2		FAIR
3002	PLATA	312	9	215.546	1	42.44	4		FAIR
3002	PLATA	313	9	222.511	1	38.10	3		WEAK
3002	PLATA	313	9	222.511	1	38.38	2		FAIR
3002	PLATA	313	9	222.511	1	43.40	4		FAIR
3002	PLATA	314	9	229.606	1	38.92	3		FAIR
3002	PLATA	314	9	229.606	1	39.55	2		FAIR
3002	PLATA	314	9	229.606	1	44.30	4		FAIR
3002	PLATA	315	9	236.296	1	39.80	3		WEAK
3002	PLATA	315	9	236.296	1	40.37	2		FAIR
3002	PLATA	315	9	236.296	1	44.17	5		FAIR
3002	PLATA	315	9	236.296	1	44.36	4		STRONG
3002	PLATA	316	9	243.913	1	41.15	3		WEAK
3002	PLATA	316	9	243.913	1	41.80	2		WEAK
3002	PLATA	316	9	243.913	1	46.02	5		STRONG
3002	PLATA	316	9	243.913	1	46.05	4		STRONG
3002	PLATA	320	9	256.457	1	42.74	3		WEAK
3002	PLATA	320	9	256.457	1	43.58	2		WEAK
3002	PLATA	320	9	256.457	1	46.74	4		FAIR
3002	PLATA	320	9	256.457	1	47.28	5		FAIR
3002	PLATA	322	9	385.267	1	57.54	6		WEAK
3002	PLATA	322	9	385.267	1	58.85	7		FAIR

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3002	PLATA	322	9	385.267	1	60.10	4		WEAK
3002	PLATA	322	9	385.267	1	60.94	8		FAIR
3002	PLATA	323	9	405.786	1	56.96	1		PN POOR
3002	PLATA	323	9	405.786	1	61.84	4		WEAK
3002	PLATA	323	9	405.786	1	63.15	8		WEAK
3002	PLATA	324	9	426.987	1	66.70	8		WEAK
3002	PLATA	326	9	469.037	1	68.65	7		FAIR
3002	PLATA	327	9	437.187	1	63.78	6		WEAK
3002	PLATA	327	9	437.187	1	64.82	7		WEAK
3002	PLATA	327	9	437.187	1	65.42	4		WEAK
3002	PLATA	327	9	437.187	1	67.28	8		FAIR
3002	PLATA	328	9	426.567	1	62.54	6		FAIR
3002	PLATA	328	9	426.567	1	63.60	7		STRONG
3002	PLATA	328	9	426.567	1	64.45	4		WEAK
3002	PLATA	328	9	426.567	1	66.20	8		FAIR
3002	PLATA	329	9	371.621	1	55.75	6		WEAK
3002	PLATA	329	9	371.621	1	57.15	7		FAIR
3002	PLATA	329	9	371.621	1	58.66	4		FAIR
3002	PLATA	329	9	371.621	1	59.26	8		STRONG
3002	PLATA	329	9	371.621	1	61.55	2		WEAK
3002	PLATA	330	9	360.566	1	56.23	7		STRONG
3002	PLATA	330	9	360.566	1	57.97	4		FAIR
3002	PLATA	330	9	360.566	1	58.30	8		STRONG
3002	PLATA	330	9	360.566	1	60.10	2		WEAK
3002	PLATA	330	9	360.566	1	63.00	5		WEAK
3002	PLATA	332	9	352.574	1	56.90	4		WEAK
3002	PLATA	332	9	352.574	1	57.00	8		FAIR
3002	PLATA	332	9	352.574	1	61.50	5		WEAK
3002	PLATA	333	9	329.580	1	54.00	4		WEAK
3002	PLATA	333	9	329.580	1	54.45	2		WEAK
3002	PLATA	333	9	329.580	1	57.35	5		WEAK
3002	PLATA	334	9	306.797	1	44.87	2		WEAK
3002	PLATA	334	9	306.797	1	45.58	4		WEAK
3002	PLATA	334	9	306.797	1	48.25	5		FAIR
3002	PLATA	335	9	285.190	1	42.68	1		PN POOR
3002	PLATA	335	9	285.190	1	48.05	2		WEAK
3002	PLATA	335	9	285.190	1	49.86	4		FAIR
3002	PLATA	335	9	285.190	1	51.70	5		WEAK
3002	PLATA	337	9	262.802	1	43.57	3		WEAK
3002	PLATA	337	9	262.802	1	44.55	2		WEAK
3002	PLATA	337	9	262.802	1	46.80	4		FAIR
3002	PLATA	337	9	262.802	1	48.34	5		FAIR
3002	PLATA	603	9	57.643	1	11.17	1		GOOD
3002	PLATA	603	9	57.643	1	11.90	2		FAIR
3002	PLATA	603	9	57.643	1	13.94	3		FAIR
3002	PLATA	603	9	57.643	1	15.26	4		FAIR
3002	PLATA	603	9	57.643	1	18.20	5		FAIR
3002	PLATA	604	9	57.219	1	11.85	1		GOOD
3002	PLATA	604	9	57.219	1	12.53	2		FAIR
3002	PLATA	604	9	57.219	1	12.97	3		FAIR

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3002	PLATA	604	9	57.219	1	13.85	4		FAIR
3002	PLATA	604	9	57.219	1	14.57	5		FAIR
3002	PLATA	604	9	57.219	1	15.83	6		FAIR
3002	PLATA	604	9	57.219	1	19.14	7		FAIR
3002	PLATA	605	9	184.824	1	30.65	1		GOOD
3002	PLATA	605	9	184.824	1	31.68	2		FAIR
3002	PLATA	607	9	39.113	1	8.72	1		GOOD
3002	PLATA	608	9	39.113	1	8.42	1		GOOD
GEORGIA INSTITUTE OF TECHNOLOGY									
3102	GEOTEC	303	8	212.089	0	32.43	1		FAIR
3102	GEOTEC	304	8	220.538	0	34.30	1		FAIR
3102	SHELL	304	8	220.538	0	34.55	1		FAIR
3102	GEOTEC	305	8	226.945	0	34.44	1		POOR
3102	SHELL	305	8	226.945	0	34.77	1		FAIR
3102	GEOTEC	306	8	234.280	0	35.32	1		POOR
3102	SHELL	306	8	234.280	0	34.62	1		POOR
3102	GEOTEC	307	8	240.844	0	36.61	1		FAIR
3102	SHELL	307	8	240.844	0	36.53	1		FAIR
3102	GEOTEC	308	8	249.271	0	37.65	1		GOOD
3102	SHELL	308	8	249.271	0	37.70	1		FAIR
3102	GEOTEC	309	8	236.280	0	35.95	1		POOR
3102	SHELL	309	8	236.280	0	36.17	1		FAIR
3102	GEOTEC	310	8	244.250	0	36.96	1		POOR
3102	SHELL	310	8	244.250	0	37.24	1		FAIR
3102	GEOTEC	311	8	250.929	0	36.83	1		POOR
3102	SHELL	311	8	250.929	0	39.43	1		POOR
3102	GEOTEC	312	8	258.891	0	39.56	1		POOR
3102	SHELL	312	8	258.891	0	39.61	1		FAIR
3102	GEOTEC	313	8	265.893	0	43.77	1		POOR
3102	SHELL	313	8	265.893	0	43.74	1		FAIR
3102	GEOTEC	314	8	272.941	0	44.51	1		GOOD
3102	SHELL	314	8	272.941	0	44.62	1		FAIR
3102	GEOTEC	315	8	279.649	0		1		
3102	SHELL	315	8	279.649	0	45.50	1		FAIR
3102	GEOTEC	316	8	287.279	0	46.53	1		POOR
3102	SHELL	316	8	287.279	0	46.82	1		FAIR
3102	GEOTEC	320	8	299.807	0	48.72	1		GOOD
3102	SHELL	320	8	299.807	0	48.83	1		FAIR
3102	GEOTEC	322	8	428.718	0		1		
3102	GEOTEC	323	8	449.209	0		1		
3102	GEOTEC	324	8	470.472	0		1		
3102	GEOTEC	326	8	512.647	0	72.86	1		FAIR
3102	SHELL	326	8	512.647	0	72.74	1		POOR
3102	GEOTEC	327	8	480.694	0		1		
3102	GEOTEC	328	8	470.055	0	66.43	1		POOR
3102	SHELL	328	8	470.055	0	67.69	1		POOR
3102	GEOTEC	329	8	415.059	0	61.43	1		FAIR
3102	SHELL	329	8	415.059	0	62.57	1		POOR
3102	GEOTEC	330	8	404.049	0	60.79	1		GOOD
3102	GEOTEC	331	8	396.654	0		1		
3102	SHELL	331	8	396.654	0	54.32	1		POOR

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3102	GEOTEC	332	8	395.976	0	59.87	1		FAIR
3102	GEOTEC	333	8	372.953	0	56.95	1		POOR
3102	GEOTEC	334	8	350.163	0	53.04	1		POOR
3102	SHELL	334	8	350.163	0	52.83	1		POOR
3102	GEOTEC	335	8	328.547	0		1		
3102	SHELL	335	8	328.547	0	51.80	1		FAIR
3102	GEOTEC	336	8	317.696	0	50.34	1		POOR
3102	SHELL	336	8	317.696	0	52.04	1		FAIR
3102	GEOTEC	337	8	306.141	0	46.56	1		POOR
3102	SHELL	337	8	306.141	0	47.79	1		POOR
3102	SHELL	338	8	280.824	0	43.83	1		POOR
3102	SHELL	341	8	298.697	0	49.39	1		POOR
3102	SHELL	343	8	306.977	0	45.01	1		POOR
3102	SHELL	344	8	287.487	0	47.19	1		FAIR
3102	SHELL	345	8	287.839	0	44.85	1		POOR
3102	SHELL	346	8	290.693	0	43.04	1		POOR
3102	SHELL	347	8	303.280	0	47.70	1		POOR
3102	SHELL	348	8	313.129	0	51.25	1		FAIR
3102	SHELL	349	8	322.296	0	53.09	1		FAIR
3102	SHELL	350	8	284.057	0	46.22	1		FAIR
3102	SHELL	353	8	284.353	0	46.51	1		FAIR
3102	SHELL	354	8	282.440	0	46.04	1		FAIR
3102	SHELL	355	8	283.225	0	44.80	1		POOR
3102	GEOTEC	603	8	102.024	0	17.54	1		POOR
3102	SHELL	603	8	102.024	0	17.52	1		FAIR
3102	SHELL	604	8	101.657	0	17.33	1		FAIR
3102	GEOTEC	604	8	101.657	0	17.34	1		GOOD
3102	GEOTEC	606	8	154.705	0	24.92	1		FAIR
3102	SHELL	606	8	154.705	0	25.83	1		POOR
3102	SHELL	607	8	82.904	0	14.17	1		FAIR
3102	GEOTEC	607	8	82.904	0	14.10	1		FAIR
3102	SHELL	608	8	82.904	0	14.17	1		FAIR
3102	GEOTEC	728	8	459.351	0				
3102	GEOTEC	729	8	430.587	0				
3102	GEOTEC	731	8	751.824	0				
3103	GEOTEC	338	8	176.855	0		1		
3103	GEOTEC	340	8	136.439	0	23.84	1		FAIR
3103	GEOTEC	341	8	116.986	0	20.59	1		FAIR
3103	GEOTEC	342	8	[illegible]	0	17.79	1		FAIR
3103	GEOTEC	343	8	9[illegible]	0	17.73	1		GOOD
3103	GEOTEC	344	8	284.117	0	42.19	1		GOOD
3103	GEOTEC	345	8	303.043	0	44.26	1		GOOD
3103	GEOTEC	346	8	324.258	0	46.22	1		FAIR
3103	GEOTEC	347	8	341.560	0	48.10	1		FAIR
3103	GEOTEC	348	8	364.540	0	50.98	1		FAIR
3103	GEOTEC	349	8	379.943	0	52.29	1		GOOD
3103	GEOTEC	350	8	278.882	0	41.56	1		GOOD
3103	GEOTEC	353	8	259.219	0	39.27	1		FAIR
3103	GEOTEC	354	8	231.383	0	35.82	1		GOOD
3103	GEOTEC	355	8	211.520	0	33.60	1		GOOD

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3103	GEOTEC	356	8	188.395	0	33.41	1		POOR
PENNSYLVANIA STATE UNIVERSITY									
3203	PSU	303	9	115.635	0	20.66	1		
3203	PSU	304	9	124.072	0	22.22	1		
3203	PSU	305	9	130.472	0	23.34	1		
3203	PSU	306	9	137.807	0	24.65	0		
3203	PSU	307	9	144.369	0	25.40	1		
3203	PSU	308	9	152.808	0	26.58	1		
3203	PSU	309	9	139.814	0	24.90	1		
3203	PSU	310	9	147.775	0	26.06	1		
3203	PSU	311	9	154.423	0	26.90	1		
3203	PSU	312	9	162.412	0	27.98	1		
3203	PSU	313	9	169.420	0	28.80	1		
3203	PSU	313	9	169.420	0	29.59	2		
3203	PSU	314	9	176.447	0	30.50	0		
3203	PSU	315	9	183.160	0	31.36	0		
3203	PSU	316	9	190.789	0	32.43	0		
3203	PSU	320	9	203.306	0	34.50	0		
3203	PSU	326	9	416.189	0	61.88	0		
3203	PSU	327	9	384.201	0	57.51	0		
3203	PSU	328	9	373.556	0	56.26	0		
3203	PSU	329	9	318.555	0	49.89	0		
3203	PSU	330	9	307.563	0	49.00	0		
3203	PSU	333	9	276.443	0	46.23	3		
3203	PSU	334	9	253.650	0	42.88	0		
3203	PSU	335	9	232.039	0	36.91	1		
3203	PSU	335	9	232.039	0	38.56	2		
3203	PSU	336	9	221.201	0	37.24	0		
3203	PSU	338	9	184.828	0	29.66	0		
3203	PSU	337	9	209.641	0	33.13	1		
3203	PSU	337	9	209.641	0	35.06	2		
3203	PSU	337	9	209.641	0	35.45	3		
3203	PSU	338	9	184.828	0	31.63	0		
3203	PSU	340	9	198.826	0	31.89	1		
3203	PSU	341	9	208.042	0	32.70	1		
3203	PSU	341	9	208.042	0	34.99	2		
3203	PSU	342	9	219.297	0	34.19	1		
3203	PSU	343	9	219.110	0	34.24	1		
3203	PSU	344	9	196.981	0	33.20	0		
3203	PSU	345	9	200.446	0	33.88	0		
3203	PSU	346	9	207.267	0	34.92	0		
3203	PSU	347	9	222.213	0	37.26	0		
3203	PSU	348	9	236.172	0	39.19	0		
3203	PSU	349	9	247.792	0	37.93	1		
3203	PSU	349	9	247.792	0	40.98	2		
3203	PSU	350	9	192.973	0	30.70	0		
3203	PSU	350	9	192.973	0	32.88	0		
3203	PSU	353	9	190.808	0	32.48	1		
3203	PSU	354	9	186.687	0	31.97	0		
3203	PSU	355	9	186.743	0	31.95	0		
3203	PSU	356	9	122.831	0	22.80	1		

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3203	PSU	603	9	16.077	0	3.81	1		
3203	PSU	604	9	16.618	0	3.80	1		
3203	PSU	605	9	208.399	0	33.77	1		
3203	PSU	606	9	208.399	0	33.81	1		
3203	PSU	607	9	17.656	0	4.31	1		
3203	PSU	608	9	17.656	0	4.24	1		
UNIVERSITY OF MICHIGAN									
3350	BWATER	303	8	105.883	0	19.41	1		
3350	BWATER	304	8	114.121	0	20.51	1		
3350	BWATER	305	8	120.347	0	21.54	1		
3350	BWATER	306	8	127.435	0	22.81	1		
3350	BWATER	307	8	133.832	0	23.84	1		
3350	BWATER	308	8	141.924	0	24.92	1		
3350	BWATER	309	8	129.308	0	23.09	1		
3350	BWATER	310	8	137.141	0	24.43	1		
3350	BWATER	312	8	151.475	0	26.52	1		
3350	BWATER	313	8	158.268	0	27.44	1		
3350	BWATER	314	8	165.389	0	28.53	1		
3350	BWATER	315	8	171.931	0	29.30	1		
3350	BWATER	316	8	179.458	0	30.37	1		
3350	BWATER	320	8	191.911	0	32.38	1		
3350	BWATER	323	8	340.358	0	52.39	0		
3350	BWATER	326	8	403.055	0	56.32	1		
3350	BWATER	327	8	371.489	0	55.46	0		
3350	BWATER	328	8	360.932	0	54.56	0		
3350	BWATER	329	8	306.230	0	50.84	0		
3350	BWATER	330	8	295.107	0	48.82	0		
3350	BWATER	332	8	287.326	0	44.33	0		
3350	BWATER	333	8	264.494	0	44.39	0		
3350	BWATER	334	8	241.871	0	37.13	1		
3350	BWATER	335	8	220.390	0	35.37	1		
3350	BWATER	336	8	209.521	0	33.10	1		
3350	BWATER	337	8	198.249	0	33.59	0		
3350	BWATER	338	8	180.241	0	30.67	0		
3350	BWATER	340	8	201.392	0	33.64	0		
3350	BWATER	341	8	213.617	0	35.34	0		
3350	BWATER	342	8	227.690	0	35.15	1		
3350	BWATER	343	8	227.622	0	35.06	1		
3350	BWATER	344	8	172.966	0	28.47	1		
3350	BWATER	346	8	177.917	0	30.64	0		
3350	BWATER	347	8	191.730	0	32.43	0		
3350	BWATER	348	8	204.078	0	34.17	0		
3350	BWATER	349	8	214.951	0	35.79	0		
3350	BWATER	353	8	170.710	0	28.76	1		
3350	BWATER	354	8	171.541	0	30.21	0		
3350	BWATER	355	8	175.376	0	28.40	1		
3351	TAYLOR	303	8	259.252	0	38.01	1		
3351	TAYLOR	304	8	267.633	0	39.51	1		
3351	TAYLOR	305	8	273.963	0	40.44	1		
3351	TAYLOR	306	8	281.168	0	41.11	1		
3351	TAYLOR	307	8	287.646	0	42.14	1		

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3351	TAYLOR	308	8	295.856	0	43.57	1		
3351	TAYLOR	309	8	283.087	0	42.09	1		
3351	TAYLOR	310	8	290.995	0	44.73	0		
3351	TAYLOR	311	8	297.829	0	43.44	1		
3351	TAYLOR	312	8	305.457	0	44.82	1		
3351	TAYLOR	313	8	312.313	0	49.94	0		
3351	TAYLOR	314	8	319.440	0	46.63	1		
3351	TAYLOR	315	8	326.026	0	47.60	1		
3351	TAYLOR	316	8	333.585	0	49.17	1		
3351	TAYLOR	320	8	346.069	0	50.88	0		
3351	TAYLOR	322	8	474.025	0	67.01	0		NOISY
3351	TAYLOR	323	8	494.579	0	70.59	0		
3351	TAYLOR	324	8	515.537	0	73.70	0		
3351	TAYLOR	326	8	557.139	0	78.22	0		
3351	TAYLOR	327	8	525.659	0	74.06	0		
3351	TAYLOR	328	8	515.118	0	73.06	0		
3351	TAYLOR	329	8	460.464	0	66.74	0		
3351	TAYLOR	330	8	449.338	0	65.72	0		
3351	TAYLOR	331	8	442.195	0	64.76	0		
3351	TAYLOR	332	8	441.571	0	63.93	0		
3351	TAYLOR	333	8	418.740	0	62.59	0		
3351	TAYLOR	334	8	396.106	0	63.73	0		
3351	TAYLOR	335	8	374.605	0	53.77	1		
3351	TAYLOR	336	8	363.729	0	51.60	1		
3351	TAYLOR	337	8	352.414	0	50.99	1		
3351	TAYLOR	338	8	331.920	0	47.97	1		
3351	TAYLOR	340	8	347.386	0	51.84	0		
3351	TAYLOR	341	8	356.174	0	50.44	1		
3351	TAYLOR	342	8	366.373	0	51.40	1		
3351	TAYLOR	343	8	366.130	0	51.46	1		
3351	TAYLOR	344	8	321.634	0	46.97	1		
3351	TAYLOR	345	8	318.318	0	47.33	0		
3351	TAYLOR	346	8	316.972	0	50.34	0		
3351	TAYLOR	347	8	326.821	0	49.08	0		
3351	TAYLOR	348	8	332.538	0	49.57	0		
3351	TAYLOR	349	8	339.201	0	49.99	0		
3351	TAYLOR	350	8	319.047	0	48.24	0		
3351	TAYLOR	353	8	322.926	0	47.36	1		
3351	TAYLOR	354	8	325.644	0	49.11	0		
3351	TAYLOR	355	8	329.499	0	47.50	1		
3351	TAYLOR	356	8	270.440	0	44.20	0		
3352	BURN8R	303	8	284.862	0	42.71	1		
3352	BURN8R	304	8	293.194	0	43.81	1		
3352	BURN8R	305	8	299.481	0	43.94	1		
3352	BURN8R	306	8	306.630	0	45.21	1		
3352	BURN8R	307	8	313.064	0	45.84	1		
3352	BURN8R	308	8	321.197	0	46.72	1		
3352	BURN8R	309	8	308.524	0	45.44	1		
3352	BURN8R	310	8	316.389	0	45.18	1		NOISY
3352	BURN8R	312	8	330.760	0	48.42	1		

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
3352	BURNBR	315	8	351.219	0	50.70	1		
3352	BURNBR	322	8	498.615	0	71.26	0		
3352	BURNBR	323	8	519.150	0	73.39	0		
3352	BURNBR	324	8	539.997	0	77.20	0		WWV BAD
3352	BURNBR	326	8	581.389	0	81.32	0		
CARNEGIE INSTITUTION AND AIR FORCE TECHNICAL APPLICATIONS CENTER									
4104	UPSTRT	347	9	280.391	1	42.96	1		FAIRLY GOOD
4104	UPSTRT	348	9	296.075	1	[illegible]	1		
4104	UPSTRT	349	9	308.484	1	45.65	1		
4106	UPSTRT	344	9	226.205	1	36.19	1		BETTER THAN 345,346
4106	UPSTRT	345	9	232.103	1	37.28	1		UNCERTAIN ONSET
4106	UPSTRT	346	9	241.147	1	40.15	1		
4108	UPSTRT	350	9	177 951	1	30.70	1		GOOD
4108	UPSTRT	353	9	171.471	1	29.70	1		GOOD
4108	UPSTRT	354	9	161.694	1	28.66	1		FAIR
4108	UPSTRT	355	9	157.856	1	27.55	1		PICK MAY BE EARLY
4112	UPSTRT	338	9	173.001	1	29.66	1		
4112	UPSTRT	340	9	167.104	1	29.15	1		
4114	UPSTRT	341	9	147.366	1	26.07	1		
4114	UPSTRT	342	9	151.930	1	26.28	1		
4114	UPSTRT	343	9	151.523	1	26.47	1		
4118	UPSTRT	333	9	275.008	1	4[illegible].76	1		
4118	UPSTRT	334	9	254.926	1	35.86	1		
4118	UPSTRT	335	9	236.565	1	38.80	1		
4118	UPSTRT	336	9	227.932	1	36.90	1		
4118	UPSTRT	337	9	217.825	1	34.80	1		
4122	UPSTRT	306	9	245.853	1	38.15	1		
4122	UPSTRT	307	9	250.111	1	38.03	1		F/
4122	UPSTRT	308	9	256.212	1	39.39	1		
4122	UPSTRT	605	9	140.284	1	23.26	1		
4122	UPSTRT	606	9	140.284	1	23.28	1		
4124	UPSTRT	303	9	204.363	1	32.96	1		
4124	UPSTRT	603	9	189.424	1	30.76	1		
4124	UPSTRT	604	9	190.146	1	31.16	1		BETTER THAN 603
4126	UPSTRT	327	9	373.226	1	55.60	1		
4126	UPSTRT	328	9	363.409	1	54.55	1		
4126	UPSTRT	329	9	314.680	1	48.87	1		
4126	UPSTRT	330	9	306.132	1	47.63	1		
4128	UPSTRT	322	9	287.822	1	46.65	1		POOR
4128	UPSTRT	323	9	304.881	1	48.33	1		POOR
4128	UPSTRT	324	9	324.754	1	51.50	1		
4128	UPSTRT	326	9	364.808	1	56.57	1		
4132	UPSTRT	309	9	265.007	1	40.65	1		
4132	UPSTRT	310	9	269.220	1	41.09	1		
4132	UPSTRT	311	9	271.866	1	41.52	1		
4132	UPSTRT	312	9	277.768	1	41.98	1		
4134	UPSTRT	314	9	256.702	1	38.92	1		
4134	UPSTRT	315	9	260.987	1	39.45	1		
4134	UPSTRT	316	9	265.665	1	40.29	1		
4134	UPSTRT	607	9	217.927	1	34.52	1		FAIR
4134	UPSTRT	608	9	217.927	1	34.25	1		

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	F	TIME SEC.	P	VEL. KM/SEC	COMMENT
4136	UPSTRT	320	9	243.686	1	38.48	1		FAIR
4202	ZULU	305	9	284.541	1	42.74	1		GOOD
4202	ZULU	306	9	287.613	1	43.64	1		GOOD
4202	ZULU	308	9	294.679	1	44.16	1		VERY GOOD
4202	ZULU	605	9	208.709	1	32.30	1		FAIR - - CHECKED
4202	ZULU	606	9	208.709	1	32.41	1		FAIR - - CHECKED
4204	ZULU	303	9	259.096	1	39.60	1		
4204	ZULU	304	9	261.377	1	39.78	1		QUESTIONABLE
4204	ZULU	603	9	261.131	1	39.62	1		GOOD
4204	ZULU	604	9	261.884	1	40.54	1		GOOD
4206	ZULU	320	9	267.920	1	40.99	1		
4208	ZULU	327	9	361.464	1	53.51	1		UNCERTAIN
4208	ZULU	329	9	310.028	1	46.34	1		MAY BE EARLIER
4208	ZULU	330	9	303.260	1	45.66	1		UNCERTAIN
4222	ZULU	313	9	287.505	1	42.92	1		FAIR
4222	ZULU	314	9	288.676	1	43.04	1		VERY GOOD
4222	ZULU	315	9	291.162	1	43.71	1		FAIR
4223	ZULU	316	9	293.770	1	44.09	1		GOOD
4223	ZULU	326	9	391.460	1	54.27	1		POOR
4224	ZULU	331	9	310.255	1	45.61	1		UNCERTAIN
4224	ZULU	332	9	309.496	1	46.92	1		POOR
4224	ZULU	333	9	296.859	1	45.43	1		FAIR
4224	ZULU	334	9	285.978	1	37.67	1		UNCERTAIN
4224	ZULU	335	9	277.396	1	42.05	1		POOR
4224	ZULU	336	9	274.253	1	42.33	1		FAIR
4236	ZULU	353	9	384.985	1	55.32	1		GOOD
4236	ZULU	354	9	358.748	1	52.77	1		VERY LITTLE ENERGY
4236	ZULU	355	9	340.275	1	50.84	1		GOOD
4238	ZULU	309	9	314.061	1	46.44	1		POOR ONSET
4238	ZULU	311	9	314.680	1	46.58	1		FAIR
4238	ZULU	312	9	317.657	1	46.94	1		FAIR
4240	ZULU	344	9	371.478	1	52.92	1		EXCELLENT
4240	ZULU	345	9	389.978	1	55.66	1		FAIR
4242	ZULU	322	9	335.162	1	49.68	1		POOR
4242	ZULU	323	9	345.998	1	50.23	1		VERY POOR
4242	ZULU	324	9	361.102	1	53.43	1		POOR
4246	ZULU	341	9	279.359	1	42.66	1		GOOD
4246	ZULU	342	9	260.370	1	39.83	1		VERY GOOD
4246	ZULU	343	9	259.667	1	39.98	1		EXCELLENT
4248	ZULU	338	9	316.378	1	46.42	1		GOOD
4248	ZULU	340	9	276.946	1	42.08	1		GOOD
4250	ZULU	347	9	466.9[illegible]	1	64.65	1		FAIR
4250	ZULU	348	9	489.815	1	66.01	1		VERY POOR
4250	ZULU	349	9	505.246	1	69.57	1		POL
4312	YOKE	348	9	495.143	1	67.44	1		DEFINITE BY HERE
4312	YOKE	349	9	508.805	1	69.94	1		
4314	YOKE	344	9	415.755	1	58.69	1		
4314	YOKE	345	9	427.610	1	60.33	1		
4314	YOKE	346	9	442.000	1	61.53	1		
4314	YOKE	347	9	459.565	1	64.06	1		

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4316	YOKE	350	9	376.213	1	54.16	1		
4316	YOKE	353	9	363.263	1	52.52	1		NO EARLIER
4316	YOKE	354	9	343.050	1	49.99	1		GOOD - - CHECKED
4316	YOKE	356	9	265.208	1	41.31	1		FAIR
4320	YOKE	303	9	523.435	1	73.47	1		CHECKED
4320	YOKE	304	9	529.249	1	73.48	1		GOOD CHECKED
4320	YOKE	305	9	533.810	1	75.09	1		POOR
4320	YOKE	604	9	460.675	1	66.88	1		FAIR
4322	YOKE	314	9	536.511	1	73.71	1		WEAK BEGINNING
4322	YOKE	315	9	541.762	1	74.40	1		GOOD
4322	YOKE	316	9	547.508	1	75.53	1		VERY GOOD
4322	YOKE	607	9	420.351	1	61.05	1		
4322	YOKE	608	9	420.351	1	60.70	1		
4324	YOKE	309	9	482.287	1	67.18	1		
4324	YOKE	310	9	487.580	1	68.08	1		
4324	YOKE	311	9	491.181	1	68.57	1		
4324	YOKE	312	9	497.826	1	69.98	1		CANNONT BE EARLIER
4328	YOKE	338	9	416.222	1	58.48	1		
4328	YOKE	340	9	392.320	1	56.53	1		
4328	YOKE	341	9	381.574	1	54.80	1		
4328	YOKE	342	9	371.087	1	53.22	1		
4328	YOKE	343	9	370.346	1	53.38	1		
4332	YOKE	355	9	380.850	1	55.69	1		GOOD EVENT
4334	YOKE	322	9	457.417	1	65.70	1		
4334	YOKE	323	9	473.126	1	67.19	1		
4334	YOKE	324	9	491.950	1	70.89	1		POOR
4334	YOKE	326	9	530.038	1	75.00	1		NOT VERY STRONG
4344	YOKE	331	9	547.501	1	78.09	1		VERY POOR
4344	YOKE	332	9	546.687	1	77.82	1		VERY POOR
4344	YOKE	333	9	529.048	1	75.17	1		
4344	YOKE	334	9	512.273	1	66.97	1		
4344	YOKE	335	9	497.111	1	70.98	1		VERY POOR
4344	YOKE	336	9	490.162	1	70.09	1		
4348	YOKE	327	9	542.053	1	75.71	1		FAIR
4348	YOKE	328	9	533.143	1	74.57	1		POORER THAN 327
4348	YOKE	329	9	489.664	1	69.34	1		POOR
4348	YOKE	330	9	482.434	1	68.75	1		
4402	VIRGNA	338	9	456.764	1	64.22	1		GOOD
4402	VIRGNA	340	9	449.205	1	63.52	1		GOOD
4402	VIRGNA	341	9	445.642	1	63.34	1		GOOD
4408	SUVA	303	9	305.692	1	46.18	1		POOR
4408	STIMES	303	9	305.692	1	45.95	1		EMERGENT BUT CLEAR
4408	SUVA	304	9	312.995	1	45.33	1		POOR
4408	STIMES	304	9	312.995	1	46.14	1		GOOD
4408	SUVA	305	9	318.639	1	47.12	1		GOOD
4408	STIMES	305	9	318.639	1	46.95	1		GOOD
4408	SUVA	306	9	325.253	1	48.32	1		GOOD TO FAIR
4408	STIMES	306	9	325.253	1	48.22	1		VERY GOOD
4408	SUVA	307	9	331.139	1	48.58	1		FAIR TO GOOD
4408	STIMES	307	9	331.139	1	48.30	1		VERY GOOD

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4408	SUVA	308	9	339.015	1	49.76	1		EXCELLENT
4408	STIMES	308	9	339.015	1	49.43	1		VERY GOOD
4408	SUVA	327	9	557.158	1	78.09	1		FAIR
4408	SUVA	328	9	546.733	1	77.23	1		GOOD ARRIVAL
4408	SUVA	329	9	493.649	1	70.78	1		GOOD ARRIVAL
4408	SUVA	330	9	483.608	1	70.25	1		GOOD ARRIVAL
4408	SUVA	331	9	475.976	1	69.71	1		POOR
4408	SUVA	332	9	475.191	1	69.62	1		VERY POOR
4408	SUVA	333	9	453.171	1	67.52	1		POOR
4408	SUVA	334	9	431.599	1	57.71	1		GOOD
4408	SUVA	335	9	411.415	1	61.67	1		UNCERTAIN
4408	SUVA	336	9	401.576	1	57.62	1		UNCERTAIN
4408	SUVA	337	9	390.437	1	55.85	1		GOOD
4408	SUVA	338	9	353.572	1	54.48	1		UNCERTAIN
4408	SUVA	340	9	346.079	1	52.31	1		POOR
4408	SUVA	341	9	343.941	1	50.31	1		GOOD
4408	SUVA	342	9	342.905	1	49.55	1		POOR TO FAIR
4408	SUVA	343	9	342.323	1	49.82	1		GOOD
4408	SUVA	344	9	399.565	1	57.21	1		VERY GOOD
4408	SUVA	346	9	414.680	1	59.07	1		FAIR O GOOD
4408	SUVA	347	9	430.178	1	62.58	1		FAIR
4408	SUVA	348	9	444.562	1	62.96	1		FAIR
4408	SUVA	349	9	456.126	1	64.88	1		FAIR TO GOOD
4408	SUVA	350	9	394.925	1	56.55	1		FAIRLY GOOD
4408	SUVA	353	9	388.463	1	55.68	1		FAIR
4408	SUVA	355	9	369.817	1	53.80	1		VERY GOOD
4408	SUVA	356	9	298.443	1	45.49	1		GOOD
4408	SUVA	603	9	222.433	1	36.51	1		EXCELLENT
4408	STIMES	603	9	222.433	1	35.17	1		GOOD
4408	SUVA	604	9	222.596	1	37.20	1		EXCELLENT
4408	STIMES	604	9	222.596	1	35.66	1		VERY GOOD
4414	VIRGNA	343	9	436.254	1	61.92	1		VERY GOOD
4416	VIRGNA	320	9	462.354	1	64.86	1		FAIR - - WEAK
4416	VIRGNA	323	9	598.644	1	83.27	1		VERY POOR
4416	VIRGNA	324	9	619.343	1	86.97	1		FAIR
4416	VIRGNA	326	9	660.625	1	91.01	1		GOOD
4418	VIRGNA	327	9	592.686	1	82.36	1		POOR
4418	VIRGNA	328	9	582.506	1	80.51	1		POOR
4418	VIRGNA	329	9	531.039	1	76.46	1		VERY POOR
4418	VIRGNA	330	9	521.527	1	74.04	1		VERY POOR
4420	VIRGNA	314	9	371.105	1	52.79	1		VERY GOOD
4420	VIRGNA	315	9	377.015	1	53.55	1		POOR TO FAIR
4420	VIRGNA	316	9	383.564	1	54.46	1		GOOD
4420	VIRGNA	607	9	237.280	1	37.25	1		ONSET WEAK
4420	VIRGNA	608	9	237.280	1	36.93	1		POOR ONSET
4422	VIRGNA	310	9	304.934	1	45.36	1		GOOD
4422	VIRGNA	311	9	309.394	1	45.89	1		GOOD
4422	VIRGNA	312	9	316.689	1	46.84	1		ONSET UNCERTAIN
4422	VIRGNA	356	9	267.135	1	41.24	1		GOOD
4430	VIRGNA	344	9	526.861	1	72.84	1		GOOD

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4430	VIRGNA	345	9	535.410	1	74.12	1		FAIRLY GOOD
4430	VIRGNA	347	9	562.604	1	77.99	1		POOR
4430	VIRGNA	348	9	578.467	1	79.07	1		VERY POOR
4430	VIRGNA	349	9	590.773	1	81.87	1		POOR
4432	VIRGNA	350	9	490.529	1	68.12	1		POOR
4432	VIRGNA	353	9	481.057	1	67.40	1		POOR
4432	VIRGNA	354	9	465.068	1	65.36	1		POOR
4432	VIRGNA	355	9	454.695	1	64.05	1		GOOD
4434	VIRGNA	331	9	516.131	1		1		NO ENERGY
4434	VIRGNA	332	9	515.317	1	72.98	1		VERY POOR
4434	VIRGNA	334	9	475.267	1	61.74	1		POOR
4434	VIRGNA	335	9	457.076	1	65.79	1		FAIR
4434	VIRGNA	336	9	448.422	1	63.73	1		MAY BE LATE
4434	VIRGNA	337	9	438.221	1	61.24	1		FAIR - MAY BE EARLY
4438	VIRGNA	307	9	315.640	1	46.48	1		VERY GOOD
4438	VIRGNA	308	9	322.275	1	47.63	1		EXCELLENT
4438	VIRGNA	605	9	98.106	1	16.44	1		EXCELLENT
4438	VIRGNA	606	9	98.106	1	16.45	1		EXCELLENT
4440	VIRGNA	303	9	260.719	1	40.15	1		POOR
4440	VIRGNA	304	9	265.926	1	40.50	1		VERY GOOD
4440	VIRGNA	603	9	219.159	1	34.18	1		FAIR TO GOOD
4440	VIRGNA	604	9	219.718	1	35.02	1		GOOD
4502	FNWV	304	9	390.603	1	67.30	1		
4502	FNWV	305	9	396.787	1	68.60	1		
4502	FNWV	306	9	403.939	1	69.30	1		
4502	FNWV	307	9	410.314	1	69.20	1		
4502	FNWV	308	9	418.657	1	70.10	1		
4502	FNWV	309	9	405.955	1	69.10	1		
4502	FNWV	310	9	413.639	1	69.60	1		
4502	FNWV	311	9	419.804	1	70.50	1		
4502	FNWV	314	9	441.461	1	75.20	1		
4502	FNWV	316	9	455.529	1	64.50	1		
4502	FNWV	320	9	467.669	1	66.20	1		
4502	FNWV	322	9	594.566	1	84.00	1		GOOD
4502	FNWV	323	9	614.548	1	85.90	1		GOOD
4502	FNWV	324	9	635.901	1	89.80	1		GOOD
4502	FNWV	326	9	678.286	1	94.00	1		EXCELLENT
4502	FNWV	327	9	646.102	1	89.80	1		
4502	FNWV	328	9	635.493	1	88.80	1		
4502	FNWV	329	9	581.043	1	82.30	1		
4502	FNWV	330	9	570.454	1	81.30	1		
4502	FNWV	333	9	539.351	1	77.80	1		GOOD
4502	FNWV	334	9	516.924	1	68.70	1		GOOD
4502	FNWV	335	9	495.771	1	72.20	1		GOOD
4502	FNWV	336	9	485.299	1	71.20	1		GOOD
4502	FNWV	337	9	473.770	1	68.80	1		GOOD
4502	FNWV	338	9	461.238	1	70.70	1		QUESTIONABLE
4502	FNWV	340	9	440.534	1	65.10	1		QUESTIONABLE
4502	FNWV	342	9	443.158	1	63.30	1		QUESTIONABLE
4502	FNWV	343	9	442.643	1	63.10	1		EXCELLENT

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	F	TIME SEC.	P	VEL. KM/SEC	COMMENT
4502	FNWV	344	9	467.649	1	67.20	1		EXCELLENT
4502	FNWV	345	9	469.925	1	66.80	1		
4502	FNWV	346	9	474.255	1	66.70	1		QUESTIONABLE
4502	FNWV	347	9	487.407	1	69.60	1		QUESTIONABLE
4502	FNWV	348	9	497.714	1	69.20	1		QUESTIONABLE
4502	FNWV	349	9	506.906	1	71.80	1		GOOD
4502	FNWV	350	9	463.742	1	66.30	1		FAIR
4502	FNWV	355	9	451.669	1	64.60	1		FAIR
4502	FNWV	603	9	280.841	1	42.80	1		
4502	FNWV	605	9	111.905	1	18.70	1		
4502	FNWV	606	9	111.905	1	19.50	1		
4502	FNWV	607	9	261.813	1	37.80	1		
4506	WAYOUT	338	9	372.825	1	53.24	1		GOOD
4506	WAYOUT	340	9	377.276	1	54.36	1		VERY GOOD
4506	WAYOUT	341	9	380.804	1	54.94	1		VERY GOOD
4506	WAYOUT	342	9	385.583	1	54.92	1		VERY GOOD
4506	WAYOUT	343	9	385.154	1	54.89	1		GOOD
4508	TASMAN	344	9	351.285	1	51.16	1		DEFINITE BY HERE
4508	TASMAN	345	9	352.397	1	51.44	1		FAIR
4508	TASMAN	347	9	368.547	1	53.60	1		GOOD
4508	TASMAN	348	9	378.462	1	54.02	1		DEFINITE BY HERE
4508	TASMAN	349	9	387.553	1	56.02	1		POOR
4510	STIMES	327	9	506.230	1	69.89	1		EMERGENT
4510	STIMES	328	9	495.580	1	69.78	1		GOOD
4510	STIMES	329	9	440.581	1	64.97	1		GOOD
4510	STIMES	330	9	429.620	1	63.93	1		GOOD
4512	WAYOUT	327	9	643.745	1	88.89	1		GOOD
4512	WAYOUT	328	9	633.165	1	87.26	1		GOOD
4512	WAYOUT	329	9	578.941	1	82.23	1		VERY GOOD
4512	WAYOUT	330	9	568.454	1	81.07	1		VERY GOOD
4514	WAYOUT	305	9	358.539	1	52.70	1		GOOD
4514	WAYOUT	306	9	365.638	1	54.15	1		GOOD
4514	WAYOUT	307	9	371.964	1	54.11	1		GOOD
4514	WAYOUT	308	9	380.267	1	55.33	1		VERY GOOD
4514	WAYOUT	605	9	77.000	1	13.24	1		EXCELLENT
4514	WAYOUT	606	9	77.000	1	13.25	1		FAIR - EMERGENT
4516	WAYOUT	344	9	398.098	1	57.26	1		GOOD
4516	WAYOUT	345	9	400.932	1	57.96	1		FAIRLY GOOD
4516	WAYOUT	346	9	406.022	1	57.94	1		EMERGENT
4516	WAYOUT	347	9	419.672	1	59.93	1		FAIR TO GOOD
4516	WAYOUT	348	9	430.893	1	60.21	1		FAIR
4516	WAYOUT	349	9	440.680	1	62.58	1		FAIRLY GOOD
4518	WAYOUT	350	9	342.627	1	49.69	1		FAIR TO POOR
4518	WAYOUT	353	9	340.355	1	49.28	1		FAIR
4518	WAYOUT	354	9	334.537	1	48.79	1		POOR
4518	WAYOUT	355	9	332.206	1	48.84	1		GOOD
4518	WAYOUT	356	9	263.104	1	40.11	1		FAIR TO GOOD
4520	XECKS	338	9	288.683	1	43.27	1		FAIRLY GOOD
4520	XECKS	340	9	292.019	1	43.52	1		VERY GOOD
4520	XECKS	341	9	295.481	1	44.32	1		GOOD

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4520	XECKS	343	9	300.087	1	44.40	1		BEST OF SERIES
4522	TASMAN	303	9	196.184	1	30.92	1		GOOD
4522	TASMAN	304	9	204.451	1	31.93	1		FAIR
4522	TASMAN	306	9	216.016	1	34.30	1		GOOD
4522	TASMAN	307	9	224.500	1	34.88	1		NO EARLIER
4522	TASMAN	308	9	232.926	1	35.79	1		
4522	TASMAN	603	9	94.156	1	16.01	1		FAIR
4522	TASMAN	604	9	94.096	1	17.38	1		VERY GOOD
4522	TASMAN	605	9	134.142	1	22.64	1		POOR VERY NOISY
4522	TASMAN	606	9	134.142	1	22.84	1		NOISY BUT GOOD
4526	WAYOUT	320	9	458.159	1	65.06	1		FAIRLY GOOD
4526	WAYOUT	322	9	582.465	1	81.95	1		GOOD
4526	WAYOUT	323	9	602.006	1	83.80	1		GOOD
4526	WAYOUT	324	9	623.218	1	87.96	1		GOOD
4526	WAYOUT	326	9	665.376	1	91.04	1		GOOD TO VERY GOOD
4528	WAYOUT	303	9	345.084	1	51.20	1		GOOD
4528	WAYOUT	304	9	352.778	1	51.55	1		GOOD
4528	WAYOUT	603	9	252.527	1	37.83	1		PICK MAY BE EARLY
4528	WAYOUT	604	9	252.544	1	40.46	1		EMERGENT
4530	WAYOUT	313	9	354.689	1	51.23	1		FAIR
4530	WAYOUT	314	9	361.127	1	52.15	1		FAIR TO GOOD
4530	WAYOUT	315	9	367.642	1	52.99	1		GOOD
4530	WAYOUT	316	9	374.947	1	53.29	1		GOOD
4530	WAYOUT	607	9	191.743	1	32.18	1		EXCELLENT
4530	WAYOUT	608	9	191.743	1	31.94	1		GOOD
4532	WAYOUT	309	9	293.636	1	44.07	1		GOOD
4532	WAYOUT	310	9	300.971	1	44.96	1		VERY GOOD
4532	WAYOUT	311	9	306.708	1	45.54	1		GOOD
4532	WAYOUT	312	9	314.688	1	46.89	1		GOOD
4534	TASMAN	322	9	434.443	1	63.12	1		GOOD ONSET
4534	TASMAN	323	9	454.208	1	65.29	1		GOOD
4534	TASMAN	324	9	475.506	1	68.57	1		WEAK
4534	TASMAN	326	9	517.808	1	73.22	1		VERY GOOD
4536	TASMAN	320	9	272.751	1	44.01	1		QUESTIONABLE
4536	TASMAN	337	9	278.623	1	42.69	1		UNCERTAIN
4538	TASMAN	309	9	258.161	1	39.21	1		GOOD
4538	TASMAN	310	9	264.803	1	40.15	1		WEAK ONSET
4538	TASMAN	311	9	269.795	1	40.80	1		POOR
4538	TASMAN	312	9	277.424	1	41.75	1		UNCERTAIN ONSET
4538	TASMAN	313	9	283.730	1	41.85	1		BEST OF THIS GROUP
4538	TASMAN	314	9	289.456	1	42.31	1		GOOD
4538	TASMAN	315	9	295.516	1	43.27	1		UNCERTAIN
4538	TASMAN	316	9	302.281	1	44.55	1		DEFINITE BY HERE
4538	TASMAN	607	9	158.126	1	27.36	1		CHECKED
4538	TASMAN	608	9	158.126	1	27.09	1		
4542	TASMAN	327	9	449 826	1	65.01	1		NOTHING EARLIER
4542	TASMAN	328	9	439.523	1	63.92	1		NO EARLIER
4542	TASMAN	329	9	387.351	1	58.01	1		NOTHING EARLIER
4542	TASMAN	330	9	377.655	1	56.77	1		FAIRLY GOOD
4544	TASMAN	335	9	306.466	1	48.45	1		UNCERTAIN

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4544	TASMAN	336	9	296.342	1	45.73	1		LEST OF THIS SERIES
4650	CGVA	316	9	782.207	1	104.40	1		
4650	CGVA	324	9	940.888	1	125.00	1		QUESTIONABLE
4650	CGVA	326	9	980.651	1	130.00	1		QUESTIONABLE
4650	CGVA	327	9	950.276	1	126.30	1		
4650	CGVA	328	9	940.532	1	125.00	1		
4650	CGVA	330	9	882.733	1	118.11	1		
4650	CGVA	344	9	817.593	1	119.00	1		NOISY
4650	CGVA	355	9	779.095	1	105.06	1		FAIR
4706	XECKS	306	9	462.298	1	67.24	1		PROBABLY EARLIER
4706	XECKS	307	9	468.408	1	66.16	1		WEAK,BETTER THAN 306
4706	XECKS	308	9	476.505	1	67.76	1		POOR ONSET
4706	XECKS	605	9	141.073	1	24.04	1		VERY GOOD
4706	XECKS	606	9	141.073	1	24.11	1		VERY GOOD
4724	BLWV	308	9	566.217	1	78.60	1		
4724	BLWV	325	9	600.475	1	82.40	1		
4724	BLWV	327	9	782.056	1	106.90	1		
4724	BLWV	328	9	771.751	1	105.90	1		
4724	BLWV	329	9	719.387	1	100.30	1		
4724	BLWV	330	9	709.557	1	98.80	1		
4724	BLWV	337	9	617.402	1	85.20	1		QUESTIONABLE
4724	BLWV	342	9	561.685	1	78.90	1		GOOD
4724	BLWV	343	9	561.041	1	78.90	1		EXCELLENT
4724	BLWV	355	9	596.955	1	82.90	1		QUESTIONABLE
4724	BLWV	603	9	442.961	1	71.40	1		GOOD
4724	BLWV	604	9	442.979	1	71.60	1		GOOD
4724	BLWV	605	9	227.207	1	37.50	1		
4724	BLWV	606	9	227.207	1	37.30	1		
4724	BLWV	607	9	425.015	1	68.70	1		GOOD
4724	BLWV	608	9	425.015	1	67.60	1		FAIR
4812	STIMES	344	9	516.844	1	71.68	1		GOOD
4812	STIMES	345	9	515.248	1	72.29	1		GOOD
4812	STIMES	346	9	515.262	1	72.38	1		GOOD
4812	STIMES	347	9	525.696	1	72.23	1		GOOD
4812	STIMES	348	9	531.781	1	73.75	1		POOR TO FAIR
4822	STIMES	338	9	491.292	1	77.20	1		WEAK
4822	STIMES	340	9	495.104	1	70.05	1		GOOD
4822	STIMES	341	9	497.947	1	70.48	1		VERY WEAK
4822	STIMES	342	9	501.758	1	70.63	1		GOOD
4822	STIMES	343	9	501.297	1	70.72	1		VEOY GOOD
4824	STIMES	350	9	467.532	1	66.74	1		GOOD
4824	STIMES	353	9	467.819	1	67.40	1		FAIR
4824	STIMES	354	9	464.951	1	67.17	1		FAIR
4824	STIMES	355	9	464.372	1	65.92	1		VERY GOOD
4832	XECKS	328	9	708.459	1	98.53	1		BIG EVENT
4832	XECKS	329	9	653.916	1	91.87	1		BIG EVENT
4834	XECKS	322	9	633.069	1	89.23	1		POOR
4834	XECKS	323	9	653.172	1	91.22	1		GOOD
4834	XECKS	326	9	716.956	1	99.11	1		GOOD
4840	XECKS	309	9	474.763	1	68.10	1		UNCERTAIN

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4840	XECKS	310	9	482.307	1	68.67	1		UNCERTAIN
4840	XECKS	315	9	516.210	1	71.91	1		POOR ONSET
4840	XECKS	316	9	523.550	1	72.93	1		FAIR
4840	XECKS	607	9	333.913	1	51.15	1		VERY POOR
4840	XECKS	608	9	333.913	1	50.32	1		POOR ONSET
4842	XECKS	320	9	498.233	1	71.58	1		VERY POOR
4906	GS129	335	9	546.426	1	77.21	1		FAIR
4906	GS129	336	9	535.674	1	75.91	1		FAIR
4906	GS129	337	9	524.703	1	74.17	1		UNCERTAIN
4918	GS129	344	9	431.554	1	61.51	1		FAIR
4918	GS129	345	9	425.026	1	60.70	1		FAIR
4918	GS129	346	9	419.680	1	58.76	1		UNCERTAIN
4918	GS129	347	9	426.340	1	60.11	1		FAIR
4918	GS129	349	9	430.803	1	61.65	1		FAIR
4924	BRPA	308	9	429.148	1	63.10	1		
4924	BRPA	316	9	466.880	1	65.90	1		
4924	BRPA	323	9	627.735	1	87.70	1		
4924	BRPA	324	9	648.647	1	91.90	1		
4924	BRPA	326	9	6[illegible].142	1	95.80	1		EXCELLENT
4924	BRPA	327	9	[illegible] 750	1	91.80	1		
4924	BRPA	328	9	[illegible].228	1	90.80	1		
4924	BRPA	329	9	593.651	1	84.90	1		
4924	BRPA	330	9	582.526	1	83.30	1		
4924	BRPA	335	9	507.881	1	73.30	1		QUESTIONABLE
4924	BRPA	336	9	497.011	1	71.90	1		QUESTIONABLE
4924	BRPA	337	9	485.703	1	69.40	1		FAIR
4924	BRPA	343	9	494.158	1	69.80	1		GOOD
4924	BRPA	344	9	452.636	1	64.00	1		GOOD
4924	BRPA	345	9	447.871	1	63.80	1		QUESTIONABLE
4924	BRPA	347	9	452.593	1	64.40	1		QUESTIONABLE
4924	BRPA	349	9	460.191	1	65.90	1		GOOD
4924	BRPA	350	9	450.368	1	65.80	1		FAIR
4924	BRPA	354	9	458.795	1	65.70	1		
4924	BRPA	355	9	462.795	1	66.00	1		FAIR
4924	BRPA	356	9	402.893	1	33.20	1		QUESTIONABLE
4924	BRPA	603	9	281.445	1	44.80	1		
4924	BRPA	604	9	280.859	1	47.40	1		
4924	BRPA	605	9	241.315	1	39.20	1		
4924	BRPA	606	9	241.315	1	39.30	1		
4924	BRPA	607	9	264.065	1	43.70	1		GOOD
4924	BRPA	608	9	264.065	1	43.70	1		FAIR
4928	GS129	350	9	377.263	1	53.72	1		FAIR
4928	GS129	353	9	382.825	1	54.25	1		GOOD
4928	GS129	354	9	387.540	1	56.47	1		UNCERTAIN
4928	GS129	355	9	392.558	1	56.40	1		GOOD
4932	GS134	309	9	395.367	1	57.90	1		POOR
4932	GS134	310	9	403.343	1	56.71	1		UNCERTAIN
4932	GS134	311	9	410.076	1	59.68	1		FAIR
4932	GS134	312	9	417.975	1	61.08	1		FAIR
4932	GS134	313	9	424.955	1	62.06	1		FAIR

NORTHERN PROFILES: LAND STATIONS

STATION NO	STATION NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
4932	GS134	314	9	432.038	1	61.86	1		POORER THAN 313
4932	GS134	315	9	438.729	1	62.74	1		GOOD
4932	GS134	316	9	446.356	1	63.88	1		DEFINITE BY HERE
4932	GS134	607	9	241.474	1	38.63	1		FAIR
4932	GS134	608	9	241.474	1	38.39	1		FAIR
4934	GS129	309	9	361.641	1	52.42	1		GOOD
4934	GS129	310	9	369.610	1	53.61	1		FAIR
4934	GS129	311	9	376.380	1	54.97	1		GOOD
4934	GS129	312	9	384.216	1	56.10	1		GOOD
4934	GS129	313	9	391.171	1	57.71	1		UNCERTAIN
4934	GS129	314	9	398.275	1	57.76	1		FAIR
4934	GS129	315	9	404.945	1	58.59	1		DEFINITE BY HERE
4934	GS129	316	9	412.562	1	59.14	1		EXCELLENT
4934	GS129	607	9	207.853	1	33.88	1		GOOD
4934	GS129	608	9	207.853	1	33.62	1		GOOD
4936	GS134	303	9	305.736	1	46.13	1		GOOD EVENT
4936	GS134	304	9	314.157	1	45.62	1		UNCERTAIN ONSET
4936	GS134	305	9	320.520	1	46.33	1		UNCERTAIN
4936	GS134	306	9	327.772	1	48.04	1		FAIR
4936	GS134	307	9	334.283	1	48.72	1		FAIR
4936	GS134	308	9	342.559	1	50.04	1		GOOD
4936	GS134	603	9	194.467	1	31.10	1		
4936	GS134	604	9	193.902	1	31.64	1		
4936	GS134	605	9	190.359	1	30.84	1		EXCELLENT
4936	GS134	606	9	190.359	1	31.01	1		EXCELLENT
4938	WAYOUT	331	9	544.608	1	78.38	1		FAIRLY GOOD
4938	WAYOUT	332	9	543.911	1	76.82	1		FAIR
4938	WAYOUT	333	9	520.896	1	74.85	1		GOOD
4938	WAYOUT	334	9	498.125	1	64.07	1		GOOD
4938	WAYOUT	335	9	476.556	1	67.32	1		GOOD
4938	WAYOUT	336	9	465.765	1	66.45	1		GOOD
4938	WAYOUT	337	9	454.171	1	63.68	1		FAIR
4940	GS129	303	9	323.605	1	48.42	1		GOOD
4940	GS129	304	9	332.043	1	48.70	1		GOOD
4940	GS129	305	9	338.444	1	49.38	1		GOOD
4940	GS129	306	9	345.780	1	51.10	1		GOOD
4940	GS129	307	9	352.342	1	51.51	1		GOOD
4940	GS129	605	9	145.923	1	24.72	1		EXCELLENT
4940	GS129	606	9	145.923	1	24.69	1		EXCELLENT
4946	GS152	303	9	303.336	1	44.65	1		VERY POOR
4946	GS152	304	9	311.793	1	45.78	1		FAIR
4946	GS152	305	9	318.194	1	46.40	1		DEFINITE BY HERE
4946	GS152	306	9	325.507	1	47.64	1		DEFINITE BY HERE
4946	GS152	307	9	332.060	1	48.08	1		FAIR
4946	GS152	308	9	340.432	1	49.27	1		GOOD
4946	GS152	603	9	192.066	1	31.51	1		DEFINITE BY HERE
4946	GS152	604	9	191.578	1	31.73	1		
4946	GS152	605	9	167.681	1	27.46	1		EXCELLENT
4946	GS152	606	9	167.681	1	27.19	1		NOISY
5002	GS129	338	9	521.425	1	72.30	1		UNCERTAIN

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
5002	GS129	343	9	566.380	1	77.95	1		FAIR
5010	GS114	327	9	572.524	1	80.60	1		BIG EVENT
5010	GS114	328	9	563.022	1	79.45	1		BIG EVENT
5010	GS114	329	9	513.615	1	73.24	1		BIG EVENT
5010	GS114	330	9	503.044	1	72.14	1		BIG EVENT
5028	GS114	338	9	363.557	1	51.67	1		FAIR
5028	GS114	340	9	393.703	1	55.65	1		FAIR
5028	GS114	341	9	408.884	1	58.10	1		FAIR
5028	GS114	342	9	425.304	1	50.72	1		FAIR
5028	GS114	343	9	425.343	1	59.14	1		VERY GOOD
5038	GS114	344	9	335.239	1	48.39	1		GOOD
5038	GS114	345	9	326.429	1	48.45	1		POOR
5038	GS114	346	9	318.732	1	46.42	1		FAIR
5038	GS114	347	9	323.707	1	47.84	1		GOOD
5038	GS114	348	9	322.790	1	47.60	1		FAIR
5040	GS130	338	9	373.493	1	52.48	1		FAIR
5040	GS130	340	9	399.114	1	55.87	1		POOR
5040	GS130	341	9	412.291	1	58.44	1		FAIR
5040	GS130	342	9	426.737	1	59.61	1		FAIR
5040	GS130	343	9	426.674	1	59.45	1		GOOD
5046	GS114	353	9	356.540	1	50.40	1		VERY POOR
5048	GS130	344	9	315.574	1	47.99	1		FAIR
5048	GS130	345	9	308.730	1	48.68	1		POOR
5048	GS130	346	9	303.402	1	45.68	1		POOR
5048	GS130	347	9	310.364	1	48.66	1		POOR
5048	GS130	348	9	312.151	1	47.83	1		POOR
5048	GS130	349	9	316.404	1		1		NO GOOD
5048	GS130	350	9	313.931	1	45.98	1		POOR
5052	GS108	303	9	222.130	1	34.69	1		GOOD
5052	GS108	304	9	229.325	1	35.62	1		GOOD
5052	GS108	305	9	234.750	1	36.42	1		GOOD
5052	GS108	306	9	240.880	1	37.75	1		UNCERTAIN
5052	GS108	307	9	246.493	1	38.29	1		FAIR
5052	GS108	308	9	253.428	1	40.69	1		VERY POOR
5052	GS108	603	9	135.730	1	23.17	1		BETTER THAN 604
5052	GS108	604	9	134.894	1	24.03	1		DEFINITE BY HERE
5052	GS108	605	9	284.871	1	42.15	1		FAIR
5052	GS108	606	9	284.871	1	42.99	1		UNCERTAIN
5054	GS144	303	9	272.059	1	41.19	1		UNCERTAIN
5054	GS144	304	9	280.412	1	42.42	1		UNCERTAIN
5054	GS144	305	9	286.709	1	42.58	1		FAIR
5054	GS144	306	9	293.872	1	43.62	1		POOR
5054	GS144	307	9	300.316	1	44.55	1		FAIR
5054	GS144	308	9	308.469	1	45.36	1		GOOD
5054	GS144	603	9	161.799	1	27.00	1		FAIR
5054	GS144	604	9	161.161	1	27.68	1		GOOD
5054	GS144	605	9	201.897	1	32.90	1		EXCELLENT
5054	GS144	606	9	201.897	1	33.01	1		EXCELLENT
5056	CLFARM	303	9	251.270	1	39.26	1		FAIR
5056	CLFARM	304	9	259.550	1	40.32	1		FAIR

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
5056	CLFARM	305	9	265.797	1	40.64	1		POOR
5056	CLFARM	306	9	272.897	1	41.58	1		FAIR
5056	CLFARM	307	9	279.293	1	42.02	1		FAIR
5056	CLFARM	308	9	287.365	1	43.68	1		POSS .4 EARLIER
5056	CLFARM	309	9	274.771	1	42.08	1		FAIR
5056	CLFARM	310	9	282.597	1	44.27	1		FAIR
5056	CLFARM	311	9	289.437	1	44.15	1		UNCERTAIN
5056	CLFARM	312	9	296.893	1	44.58	1		UNCERTAIN
5056	CLFARM	313	9	303.651	1	45.95	1		UNCERTAIN
5056	CLFARM	314	9	310.761	1	46.64	1		UNCERTAIN
5056	CLFARM	315	9	317.765	1	48.29	1		UNCERTAIN
5056	CLFARM	316	9	324.754	1	47.11	1		DEFINITE BY HERE
5056	CLFARM	320	9	337.155	1	49.78	1		FIAR
5056	CLFARM	322	9	464.282	1	67.15	1		WEAK
5056	CLFARM	323	9	484.800	1	69.82	1		WEAK
5056	CLFARM	324	9	505.599	1	73.34	1		WEAK
5056	CLFARM	326	9	546.913	1	77.74	1		WEAK
5056	CLFARM	327	9	515.663	1	73.61	1		WEAK
5056	CLFARM	328	9	505.181	1	72.57	1		WEAK
5056	CLFARM	329	9	450.794	1	66.38	1		UNCERTAIN
5056	CLFARM	330	9	439.663	1	65.24	1		UNCERTAIN
5056	CLFARM	333	9	409.340	1	62.87	1		POOR
5056	CLFARM	335	9	365.479	1	56.72	1		VERY POOR
5056	CLFARM	336	9	354.645	1	54.83	1		POOR
5056	CLFARM	337	9	343.471	1	51.37	1		GOOD
5056	CLFARM	338	9	324.943	1	47.25	1		GOOD
5056	CLFARM	340	9	342.436	1	55.41	1		VERY POOR
5056	CLFARM	341	9	352.157	1	53.96	1		POOR
5056	CLFARM	342	9	363.293	1	51.88	1		FAIR TO POOR
5056	CLFARM	343	9	363.087	1	51.48	1		GOOD
5056	CLFARM	344	9	309.178	1	47.89	1		FAIR
5056	CLFARM	345	9	304.963	1	47.07	1		FAIR
5056	CLFARM	346	9	302.666	1	46.84	1		GOOD
5056	CLFARM	347	9	311.889	1	51.98	1		VERY POOR
5056	CLFARM	348	9	316.783	1	46.13	1		GOOD
5056	CLFARM	349	9	322.976	1	47.79	1		GOOD
5056	CLFARM	350	9	306.828	1	47.05	1		FAIR
5056	CLFARM	353	9	311.679	1	46.77	1		FAIR
5056	CLFARM	354	9	315.807	1	47.24	1		FAIR
5056	CLFARM	355	9	320.681	1	47.68	1		GOOD
5056	CLFARM	356	9	264.149	1	40.68	1		POOR
5056	CLFARM	603	9	142.103	1	24.22	1		GOOD
5056	CLFARM	604	9	141.423	1	25.09	1		BETTER THAN L/O
5056	CLFARM	605	9	209.037	1	33.79	1		GOOD
5056	CLFARM	606	9	209.037	1	33.77	1		GOOD
5056	CLFARM	607	9	126.743	1	22.52	1		FAIR
5056	CLFARM	608	9	126.743	1	22.15	1		FAIR
5058	GS108	309	9	235.438	1	37.02	1		
5058	GS108	311	9	249.868	1	36.72	1		UNCERTAIN
5058	GS108	312	9	256.989	1	39.78	1		VERY GOOD

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
5058	GS108	313	9	263.549	1	43.05	1		BIG EVENT
5058	GS108	315	9	276.927	1	40.33	1		UNCERTAIN
5058	GS108	316	9	284.270	1	42.00	1		UNCERTAIN
5058	GS108	607	9	98.383	1	17.52	1		EXCELLENT
5058	GS108	608	9	98.383	1	17.26	1		EXCELLENT
5066	DELTA	353	9	293.461	1	43.35	1		SMALL EVENT
5066	DELTA	354	9	298.303	1	45.55	1		WEAK ONSET
5066	DELTA	355	9	303.762	1	44.92	1		WEAK
5066	DELTA	356	9	248.980	1	39.20	1		FAIR
5202	STIMES	322	9	436.718	1	63.95	1		GOOD
5202	STIMES	323	9	457.249	1	65.63	1		GOOD
5202	STIMES	326	9	519.534	1	73.50	1		FAIRLY GOOD
5202	DELTA	331	9	405.004	1		1		PROB NOT PICKABLE
5202	DELTA	332	9	404.394	1		1		TRY AGAIN
5202	DELTA	333	9	381.660	1	58.67	1		FAIR
5202	DELTA	338	9	296.828	1	43.00	1		DEFINITE BY HERE
5202	DELTA	340	9	314.422	1	45.89	1		DEFINITE BY HERE
5202	DELTA	341	9	324.313	1	47.79	1		GOOD ONSET
5202	DELTA	342	9	335.693	1	46.03	1		GOOD EVENT
5202	DELTA	343	9	335.499	1	48.23	1		EXCELLENT
5204	STIMES	309	9	251.730	1	38.87	1		
5204	STIMES	310	9	259.673	1	42.57	1		
5204	STIMES	312	9	274.214	1	43.09	1		FAIR
5204	STIMES	313	9	281.122	1	45.64	1		EMERGENT
5204	STIMES	314	9	288.242	1	46.57	1		EMERGENT
5204	STIMES	315	9	294.873	1	45.04	1		GOOD
5204	STIMES	316	9	302.465	1	47.15	1		EMERGENT
5204	STIMES	607	9	99.103	1	17.97	1		
5204	STIMES	608	9	99.103	1	17.02	1		GOOD
5208	STIMES	332	9	352.571	1		1		
5208	STIMES	333	9	329.725	1	54.82	1		EMERGENT
5208	STIMES	334	9	307.081	1	45.01	1		FAIR TO GOOD
5208	STIMES	335	9	285.576	1	43.66	1		GOOD
5208	STIMES	336	9	274.702	1	45.34	1		FAIRLY GOOD
5208	STIMES	337	9	263.384	1	41.75	1		CLEAR
5220	DELTA	324	9	474.417	1	70.57	1		FAIR
5220	DELTA	326	9	515.915	1		1		PROB NOT PICKABLE
5220	DELTA	327	9	484.517	1		1		PROB NOT PICKABLE
5220	DELTA	328	9	473.998	1	68.35	1		FAIR
5220	DELTA	334	9	355.271	1	53.80	1		POOR
5220	DELTA	335	9	333.831	1	49.38	1		NOISY
5220	DELTA	336	9	322.974	1	48.40	1		FAIR
5220	DELTA	337	9	311.728	1		1		VERY NOISY
5302	OHNY	304	9	502.232	1	81.40	1		
5302	OHNY	305	9	505.211	1	81.60	1		
5302	OHNY	306	9	508.465	1	82.80	1		
5302	OHNY	308	9	515.060	1	59.80	1		
5302	OHNY	311	9	517.665	1	70.20	1		
5302	OHNY	312	9	520.348	1	70.00	1		
5302	OHNY	313	9	523.541	1	70.50	1		

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
5302	DHNY	314	9	528.055	1	70.80	1		
5302	DHNY	316	9	535.430	1	71.60	1		
5302	DHNY	322	9	623.244	1	85.30	1		QUESTIONABLE
5302	DHNY	324	9	652.360	1	90.30	1		
5302	DHNY	326	9	680.336	1	91.80	1		GOOD
5302	DHNY	328	9	652.035	1	89.30	1		POOR
5302	DHNY	329	9	614.096	1	84.10	1		POOR
5302	DHNY	330	9	605.474	1	83.70	1		GOOD
5302	DHNY	338	9	559.955	1	75.60	1		FAIR
5302	DHNY	343	9	635.262	1	85.40	1		QUESTIONABLE
5302	DHNY	344	9	469.302	1	65.60	1		VERY GOOD
5302	DHNY	346	9	430.648	1	60.40	1		QUESTIONABLE
5302	DHNY	347	9	421.314	1	66.90	1		GOOD
5302	DHNY	348	9	403.499	1	65.40	1		QUESTIONABLE
5302	DHNY	349	9	393.437	1	55.80	1		EXCELLENT
5302	DHNY	350	9	472.112	1	63.10	1		POOR
5302	DHNY	353	9	491.024	1	67.50	1		GOOD
5302	DHNY	354	9	515.098	1	70.30	1		GOOD
5302	DHNY	355	9	532.834	1	73.10	1		EXCELLENT
5302	DHNY	603	9	450.424	1	62.10	1		
5302	DHNY	604	9	449.639	1	63.60	1		
5302	DHNY	607	9	450.932	1	71.70	1		QUESTIONABLE
5304	CPO	308	9	980.500	1	130.50	1		GOOD
5304	CPO	316	9	1009.676	1	135.10	1		FAIR
5304	CPO	322	9	1124.823	1	149.30	1		
5304	CPO	323	9	1141.112	1	151.10	1		FAIR
5304	CPO	324	9	1160.231	1	154.00	1		FAIR
5304	CPO	326	9	1198.553	1	157.90	1		GOOD
5304	CPO	327	9	1169.226	1	154.10	1		GOOD
5304	CPO	328	9	1159.896	1	153.20	1		GOOD
5304	CPO	329	9	1113.287	1	148.00	1		FAIR
5304	CPO	330	9	1105.055	1	146.50	1		FAIR
5304	CPO	342	9	940.733	1	126.10	1		FAIR
5304	CPO	343	9	939.992	1	125.80	1		GOOD
5304	CPO	344	9	1049.318	1	138.80	1		GOOD
5304	CPO	355	9	1006.776	1	135.70	1		GOOD
UNITED STATES GEOLOGICAL SURVEY									
6011	KINGSE	303	8	51.798	0	9.72	1		I
6016	KINGSW	303	8	54.080	0	10.08	1		I
6011	KINGSE	304	8	59.851	0	11.27	1		I
6016	KINGSW	304	8	62.145	0	11.64	1		I
6012	KINGSE	305	8	66.452	0	12.43	1		I
6016	KINGSW	305	8	68.294	0	12.74	1		I
6012	KINGSE	306	8	73.720	0	13.71	1		I
6016	KINGSW	306	8	75.569	0	13.95	1		I
6011	KINGSE	307	8	79.749	0	14.70	1		[illegible]
6016	KINGSW	307	8	82.063	0	14.96	1		E
6012	KINGSE	308	8	88.632	0	16.45	1		E
6015	KINGSW	308	8	89.561	0	16.56	1		E
6011	KINGSE	309	8	75.107	0	14.01	1		E
6016	KINGSW	309	8	77.421	0	14.32	1		E

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6011	KINGSE	310	8	82.946	0	15.57	1		I
6016	KINGSW	310	8	85.262	0	15.87	1		I
6011	KINGSE	311	8	89.505	0	16.49	1		I
6016	KINGSW	311	8	91.819	0	16.83	1		I
6011	KINGSE	312	8	97.151	0	17.65	1		I
6016	KINGSW	312	8	99.[illegible]4	0	18.03	1		I
6011	KINGSE	313	8	103.651	0	18.87	1		I
6016	KINGSW	313	8	105.977	0	19.15	1		I
6011	KINGSE	314	8	111.195	0	19.83	1		I
6016	KINGSW	314	8	113.520	0	20.18	1		I
6011	KINGSE	315	8	117.504					NOT RECORDED
6016	KINGSW	315	8	119.832					NOT RECORDED
6011	KINGSE	316	8	124.707	0	21.97	1		I
6016	KINGSW	316	8	127.037	0	22.31	1		I
6011	KINGSE	320	8	137.322					NOT RECORDED
6016	KINGSW	320	8	139.652					NOT RECORDED
6011	KINGSE	322	8	265.413	0	48.57	1		Q
6016	KINGSW	322	8	267.285	0	48.81	1		Q
6011	KINGSE	323	8	286.378	0	50.95	1		Q
6016	KINGSW	323	8	288.250	0	51.20	1		Q
6011	KINGSE	324	8	306.630					TOO NOISY
6016	KINGSW	324	8	308.970					TOO NOISY
6011	KINGSE	326	8	348.733	0	53.98	1		Q
6016	KINGSW	326	8	351.075	0	54.22	1		Q
6011	KINGSE	327	8	316.861					TOO NOISY
6016	KINGSW	327	8	319.202					TOO NOISY
6011	KINGSE	328	8	306.202	0	48.81	1		Q
6016	KINGSW	328	8	308.542	0	49.06	1		Q
6011	KINGSE	329	8	251.340	0	41.76	1		L
6016	KINGSW	329	8	253.679	0	42.06	1		L
6011	KINGSE	330	8	240.383					TOO NOISY
6016	KINGSW	330	8	240.722					TOO NOISY
6011	KINGSE	331	8	233.087	0	39.60	1		L
6016	KINGSW	331	8	235.425	0	39.92	1		L
6011	KINGSE	332	8	232.372					TOO NOISY
6016	KINGSW	332	8	234.710					TOO NOISY
6011	KINGSE	333	8	209.481	0	35.52	1		E
6016	KINGSW	333	8	211.817	0	35.86	1		E
6011	KINGSE	334	8	186.991	0	31.88	1		E
6016	KINGSW	334	8	189.326	0	32.19	1		E
6011	KINGSE	335	8	165.596	0	28.18	1		E
6016	KINGSW	335	8	167.930	0	28.47	1		E
6011	KINGSE	336	8	154.905					NO SHOT TIME
6016	KINGSW	336	8	157.239					NO SHOT TIME
6011	KINGSE	337							NOT RECORDED
6016	KINGSW	337							NOT RECORDED
6011	KINGSE	338	8	124.330	0	21.70	1		I
6016	KINGSW	338	8	126.502	0	22.00	1		I
6011	KINGSE	340	8	146.927	0	25.20	1		E
6016	KINGSW	340	8	148.812	0	25.50	1		E

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6011	KINGSE	341	8	160.608					NO SHOT TIME
6016	KINGSW	341	8	162.350					NO SHOT TIME
6011	KINGSE	342	8	176.543	0	28.43	1		E
6016	KINGSW	342	8	178.142	0	28 58	1		E
6011	KINGSE	343	8	176.663	0	28.48	1		Q
6016	KINGSW	343	8	178.254	0	28.70	1		Q
6011	KINGSE	344	8	129.436	0	22.86	1		I
6016	KINGSW	344	8	131.524	0	23.13	1		I
6011	KINGSE	345	8	138.517	0	23.85	1		I
6016	KINGSW	345	8	140.417	0	24.09	1		I
6011	KINGSE	346	8	149.968	0	25.34	1		I
6016	KINGSW	346	8	151.717	0	25.56	1		I
6011	KINGSE	347	8	162.663	0	27.79	1		E
6016	KINGSW	347	8	164.251	0	28.02	1		E
6011	KINGSE	348	8	179.104					NOT RECORDED
6016	KINGSW	348	8	180.537					NOT RECORDED
6011	KINGSE	349	8	192.262	0	31.13	1		E
6016	KINGSW	349	8	193.607	0	31.30	1		E
6011	KINGSE	350	8	126.611	0	22.24	1		I
6016	KINGSW	350	8	128.717	0	22.55	1		I
6011	KINGSE	353	8	120.474	0	21.76	1		I
6016	KINGSW	353	8	122.703	0	22.11	1		I
6011	KINGSE	354	8	118.284	0	21.16	1		I
6016	KINGSW	354	8	120.547	0	21.48	1		I
6011	KINGSE	355	8	118.328	0	21.39	1		I
6016	KINGSW	355	8	120.660	0	21.77	1		I
6031	MORGAE	303	8	141.184	0	23.77	1		I
6036	MORGAW	303	8	143.312	0	23.98	1		I
6031	MORGAE	304	8	149.360	0	25.02	1		E
6036	MORGAW	304	8	151.488	0	25.23	1		E
6031	MORGAE	305	8	155.613	0	25.64	1		E
6036	MORGAW	305	8	157.741	0	25.88	1		E
6031	MORGAE	306	8	163.023	0	26.96	1		E
6036	MORGAW	306	8	165.151	0	27.27	1		E
6031	MORGAE	307	8	169.566	0	27.53	1		E
6036	MORGAW	307	8	171.694	0	27.75	1		E
6031	MORGAE	308	8	177.672	0	28.65	1		E
6036	MORGAW	308	8	179.800	0	28.92	1		E
6031	MORGAE	309	8	164.955	0	27.09	1		E
6035	MORGAW	309	8	166.657	0	27.30	1		E
6031	MORGAE	310	8	172.789	0	28.45	1		L
6035	MORGAW	310	8	174.491	0	28.68	1		L
6031	MORGAE	311	8	179.223	0	29.06	1		E
6035	MORGAW	311	8	180.925	0	29.25	1		E
6031	MORGAE	312	8	187.109	0	30.20	1		E
6035	MORGAW	312	8	188.811	0	30.37	1		E
6031	MORGAE	313	8	193.697	0	31.22	1		L
6035	MORGAW	313	8	195.399	0	31.41	1		L
6031	MORGAE	314	8	201.166	0	33.18	1		Q
6035	MORGAW	314	8	202.868	0	33.37	1		Q

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6031	MORGAE	315	8	207.566	0	33.93	1		Q
6036	MORGAW	315	8	209.694	0	34.18	1		Q
6031	MORGAE	316	8	214.803	0	34.94	1		Q
6036	MORGAW	316	8	216.931	0	35.20	1		Q
6031	MORGAE	320	8	227.420					NOT RECORDED
6036	MORGAW	320	8	229.548					NOT RECORDED
6031	MORGAE	322	8	355.371					NO MONITOR RECORD
6036	MORGAW	322	8	357.500					NO MONITOR RECORD
6031	MORGAE	323	8	376.359	0	55.80	1		E
6036	MORGAW	323	8	378.487	0	56.03	1		E
6031	MORGAE	324	8	397.119					NO MONITOR RECORD
6036	MORGAW	324	8	399.248					NO MONITOR RECO
6031	MORGAE	326	8	439.391					NO MONITOR RECO
6036	MORGAW	326	8	441.520					NO MONITOR RECO
6031	MORGAE	327	8	407.380	0	59.45	1		E
6036	MORGAW	327	8	409.509	0	59.67	1		E
6031	MORGAE	328	8	396.692	0	58.22	1		Q
6036	MORGAW	328	8	398.820	0	58.47	1		Q
6031	MORGAE	329	8	341.739	0	51.72	1		E
6036	MORGAW	329	8	343.868	0	52.01	1		E
6031	MORGAE	330	8	330.844	0	50.50	1		Q
6036	MORGAW	330	8	332.972	0	50.74	1		Q
6031	MORGAE	331	8	323.439					TOO NOISY
6036	MORGAW	331	8	325.568					TOO NOISY
6031	MORGAE	332	8	322.699					TOO NOISY
6036	MORGAW	332	8	324.827					TOO NOISY
6031	MORGAE	333	8	299.750	0	45.45	1		Q
6035	MORGAW	333	8	301.435	0	45.62	1		Q
6031	MORGAE	334	8	277.218	0	45.42	1		Q
6036	MORGAW	334	8	279.346	0	45.70	1		Q
6031	MORGAE	335	8	255.790	0	39.25	1		E
6036	MORGAW	335	8	257.918	0	39.51	1		E
6031	MORGAE	336	8	245.118					NO SHOT TIME
6036	MORGAW	336	8	247.246					NO SHOT TIME
6031	MORGAE	337	8	255.988	0	36.55	1		Q
6036	MORGAW	337	8	257.684	0	36.77	1		Q
6041	NEWMAE	303	8	156.864	0	25.64	1		E
6041	NEWMAE	304	8	165.342	0	26.90	1		E
6041	NEWMAE	310	8	188.469	0	30.04	1		E
6041	NEWMAE	320	8	243.103					NOT RECORDED
6041	NEWMAE	330	8	346.514	Q	52.31	1		E
6044	NEWMAW	310	8	189.611	0	30.17	1		E
6046	NEWMAW	320	8	245.007					NOT RECORDED
6046	NEWMAW	330	8	348.415	Q	52.62	1		E
6041	NEWMAE	311	8	194.913	0	30.86	1		E
6044	NEWMAW	311	8	196.056	0	31.02	1		E
6041	NEWMAE	312	8	202.789	0	32.26	1		E
6041	NEWMAE	322	8	371.048					NOT RECORDED
6044	NEWMAW	312	8	203.931	0	32.41	1		E
6046	NEWMAW	322	8	372.950					NOT RECORDED

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6041	NEWMAE	313	8	209.374	0	33.34	1		Q
6041	NEWMAE	323	8	392.035					NOT RECORDED
6044	NEWMAW	313	8	210.516	0	33.52	1		Q
6046	NEWMAW	303	8	158.767	0	26.32	1		E
6046	NEWMAW	323	8	393.556	0	57.20	1		Q
6041	NEWMAE	314	8	216.851	0	34.61	1		L
6041	NEWMAE	324	8	412.793					NOT RECORDED
6044	NEWMAW	314	8	217.993	0	34.78	1		L
6046	NEWMAW	304	8	166.945	0	27.33	1		E
6046	NEWMAW	324	8	414.695					NOT RECORDED
6041	NEWMAE	305	8	171.294	0	27.43	1		E
6041	NEWMAE	315	8	223.247	0	35.28	1		Q
6044	NEWMAW	315	8	224.389	0	35.44	1		Q
6046	NEWMAW	305	8	173.298	0	27.70	1		E
6041	NEWMAE	306	8	178.702	0	28.58	1		E
6041	NEWMAE	316	8	230.483	0	36.57	1		Q
6041	NEWMAE	326	8	455.049					NO TIMING
6044	NEWMAW	316	8	231.625	0	36.73	1		Q
6046	NEWMAW	306	8	180.605	0	28.88	1		E
6046	NEWMAW	326	8	456.949					NO TIMING
6041	NEWMAE	307	8	185.246	0	29.44	1		E
6041	NEWMAE	327	8	423.052	Q	61.36	1		E
6046	NEWMAW	307	8	187.149	0	29.72	1		E
6046	NEWMAW	327	8	424.953	Q	61.56	1		E
6041	NEWMAE	308	8	193.347	0	30.56	1		E
6041	NEWMAE	328	8	412.366	Q	59.95	1		E
6044	NEWMAW	308	8	195.249	0	30.77	1		E
6046	NEWMAW	328	8	414.267	Q	60.21	1		E
6041	NEWMAE	309	8	180.630	0	28.97	1		E
6041	NEWMAE	329	8	357.417	Q	53.61	1		E
6044	NEWMAW	309	8	181.772	0	29.15	1		E
6046	NEWMAW	329	8	359.319	Q	53.77	1		E
6051	NEWTOE	303	8	170.843	0	27.62	1		L
6056	NEWTOW	303	8	172.677	0	27.90	1		L
6051	NEWTOE	304	8	179.021	0	28.84	1		Q
6056	NEWTOW	304	8	180.853	0	29.18	1		Q
6051	NEWTOE	305	8	185.274	0	29.42	1		L
6056	NEWTOW	305	8	187.106	0	29.61	1		L
6051	NEWTOE	306	8	192.683					NOT RECORDED
6056	NEWTOW	306	8	194.517					NOT RECORDED
6051	NEWTOE	307	8	199.226	0	31.43	1		E
6056	NEWTOW	307	8	201.060	0	31.63	1		E
6051	NEWTOE	308	8	207.329	0	32.80	1		L
6056	NEWTOW	308	8	209.165	0	32.98	1		L
6051	NEWTOE	309	8	194.612	0	30.76	1		L
6056	NEWTOW	309	8	196.448	0	30.98	1		L
6051	NEWTOE	310	8	202.449	0	31.93	1		E
6056	NEWTOW	310	8	204.282	0	32.11	1		E
6051	NEWTOE	311	8	208.889					NOT RECORDED
6056	NEWTOW	311	8	210.716					NOT RECORDED

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6051	NEWTOE	312	8	216.770	0	35.81	1		Q
6056	NEWTOW	312	8	218.603	0	36.03	1		Q
6051	NEWTOE	313	8	223.356	0	36.84	1		Q
6056	NEWTOW	313	8	225.191	0	37.09	1		Q
6051	NEWTOE	314	8	230.829	0	37.34	1		Q
6056	NEWTOW	314	8	232.660	0	37.60	1		Q
6051	NEWTOE	315	8	237.227	0	38.85	1		Q
6056	NEWTOW	315	8	239.060	0	39.15	1		Q
6051	NEWTOE	316	8	244.464	0	39.84	1		Q
6056	NEWTOW	316	8	246.297	0	40.02	1		Q
6051	DENTSE	320	8	249.918					NOT RECORDED
6056	DENTSW	320	8	251.611					NOT RECORDED
6051	DENTSE	322	8	377.873	0	57.85	1		Q
6056	DENTSW	322	8	379.559	0	58.07	1		Q
6051	DENTSE	323	8	398.861	0	58.20	1		Q
6056	DENTSW	323	8	400.546	0	58.44	1		Q
6051	DENTSE	324	8	419.622	0	60.97	1		E
6056	DENTSW	324	8	421.305	0	61.20	1		E
6051	DENTSE	326	8	461.896	0	66.01	1		E
6056	DENTSW	326	8	463.564	0	66.20	1		E
6051	DENTSE	327	8	429.884	0	62.21	1		E
6056	DENTSW	327	8	431.564	0	62.40	1		E
6051	DENTSE	328	8	419.915	0	60.84	1		E
6056	DENTSW	328	8	420.878	0	61.02	1		E
6051	DENTSE	329	8	364.241	0	54.33	1		Q
6056	DENTSW	329	8	365.927	0	54.58	1		Q
6051	DENTSE	330	8	353.346	0	53.31	1		E
6056	DENTSW	330	8	355.026	0	53.54	1		E
6051	DENTSE	331	8	345.940					TOO NOISY
6056	DENTSW	331	8	347.629					TOO NOISY
6051	DENTSE	332	8	345.199					TOO NOISY
6056	DENTSW	332	8	346.890					TOO NOISY
6051	DENTSE	333	8	322.249					TOO NOISY
6056	DENTSW	333	8	323.942					TOO NOISY
6051	DENTSE	334	8	299.717					NOT RECORDED
6056	DENTSW	334	8	301.410					NOT RECORDED
6051	DENTSE	335	8	278.289	0	41.85	1		E
6056	DENTSW	335	8	279.981	0	42.08	1		E
6051	DENTSE	336	8	267.617					NO SHOT TIME
6056	DENTSW	336	8	269.306					NO SHOT TIME
6051	DENTSE	337	8	255.988					NO MONITOR RECORD
6056	DENTSW	337	8	257.684					NO MONITOR RECORD
6051	DENTSE	338	8	231.326	0	35.00	1		Q
6056	DENTSW	338	8	233.209	0	35.20	1		Q
6051	DENTSE	340	8	243.769	0	36.85	1		Q
6056	DENTSW	340	8	245.819	0	37.09	1		Q
6051	DENTSE	341	8	251.913					NO SHOT TIME
6056	DENTSW	341	8	254.021					NO SHOT TIME
6051	DENTSE	342	8	261.963	0	39.58	1		E
6056	DENTSW	342	8	264.117	0	39.84	1		E

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6051	DENTSE	343	8	261.795	0	39.22	1		E
6056	DENTSW	343	8	263.950	0	39.48	1		E
6051	DENTSE	344	8	238.690	0	39.06	1		Q
6056	DENTSW	344	8	239.876	0	39.25	1		Q
6051	DENTSE	345	8	243.210	0	39.04	1		Q
6056	DENTSW	345	8	244.209	0	39.17	1		Q
6051	DENTSE	346	8	250.440	0	40.25	1		Q
6056	DENTSW	346	8	251.297	0	40.44	1		Q
6051	DENTSE	347	8	258.238	0	42.44	1		Q
6056	DENTSW	347	8	258.946	0	42.57	1		Q
6051	DENTSE	348	8	269.402	0	42.84	1		Q
6056	DENTSW	348	8	269.956	0	42.94	1		Q
6051	DENTSE	349	8	279.205	0	41.17	1		E
6056	DENTSW	349	8	279.661	0	41.32	1		E
6051	DENTSE	350	8	236.329	0	34.99	1		Q
6056	DENTSW	350	8	237.528	0	35.15	1		Q
6051	DENTSE	353	8	232.711	0	36.75	1		Q
6056	DENTSW	353	8	234.050	0	36.95	1		Q
6051	DENTSE	354	8	231.148					NOT RECORDED
6056	DENTSW	354	8	232.537					NOT RECORDED
6051	DENTSE	355	8	231.090					NOT RECORDED
6056	DENTSW	355	8	232.767					NOT RECORDED
6061	ANTIOE	303	8	246.901	0	37.56	1		Q
6066	ANTIOW	303	8	249.385	0	37.80	1		Q
6061	ANTIOE	304	8	255.081	0	38.58	1		Q
6066	ANTIOW	304	8	257.565	0	38.87	1		Q
6061	ANTIOE	305	8	261.332	0	39.24	1		E
6066	ANTIOW	305	8	263.816	0	39.47	1		E
6061	ANTIOE	306	8	268.734	0	40.25	1		L
6066	ANTIOW	306	8	271.219	0	40.50	1		L
6061	ANTIOE	307	8	275.279	0	41.19	1		L
6066	ANTIOW	307	8	277.764	0	41.45	1		L
6061	ANTIOE	308	8	283.371	0	42.36	1		L
6066	ANTIOW	308	8	285.855	0	42.52	1		L
6061	ANTIOE	309	8	270.756	G	40.88	1		Q
6066	ANTIOW	309	8	273.141	0	41.13	1		Q
6061	ANTIOE	310	8	278.502	0	42.32	1		Q
6066	ANTIOW	310	8	280.987	0	[illegible]	1		Q
6061	ANTIOE	311	8	284.620	0	42.59	1		Q
6066	ANTIOW	311	8	287.447	0	42.78	1		Q
6061	ANTIOE	312	8	292.821	0	45.45	1		Q
6066	ANTIOW	312	8	295.306	0	45.75	1		Q
6061	ANTIOE	313	8	299.399	0	46.15	1		Q
6066	ANTIOW	313	8	301.884	0	46.42	1		Q
6061	ANTIOE	314	8	306.889	0	48.00	1		Q
6066	ANTIOW	314	8	309.374	0	48.24	1		Q
6061	ANTIOE	315	8	313.278	0	48.57	1		Q
6066	ANTIOW	315	8	315.762	0	48.77	1		Q
6061	ANTIOE	316	8	320.513	0	49.56	1		Q
6066	ANTIOW	316	8	322.998	0	49.81	1		Q

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6061	ANTIOE	320	8	333.139					NOT RECORDED
6066	ANTIOW	320	8	335.624					NOT RECORDED
6061	ANTIOE	322	8	461.065					TOO NOISY
6066	ANTIOW	322	8	463.550					TOO NOISY
6061	ANTIOE	323	8	482.052	0	69.32	1		E
6066	ANTIOW	323	8	484.537	0	69.59	1		E
6061	ANTIOE	324	8	502.805	0	71.28	1		Q
6066	ANTIOW	324	8	505.290	0	71.53	1		Q
6061	ANTIOE	326	8	544.962	0	76.33	1		E
6066	ANTIOW	326	8	547.447	0	76.56	1		E
6061	ANTIOE	327	8	513.011	0	73.16	1		Q
6066	ANTIOW	327	8	515.495	0	73.38	1		Q
6061	ANTIOE	328	8	502.377	0	70.98	1		E
6066	ANTIOW	328	8	504.862	0	71.20	1		E
6061	ANTIOE	329	8	447.437	0	65.47	1		E
6066	ANTIOW	329	8	449.922	0	65.67	1		E
6061	ANTIOE	330	8	436.518	0	63.77	1		Q
6066	ANTIOW	330	8	439.003	0	64.03	1		Q
6071	ZULLAE	303	8	257.087	0	38.34	1		Q
6076	ZULLAW	303	8	259.462	0	38.65	1		Q
6071	ZULLAE	304	8	265.267	0	39.24	1		E
6076	ZULLAW	304	8	267.242	0	39.56	1		E
6071	ZULLAE	305	8	271.518	0	39.97	1		E
6076	ZULLAW	305	8	273.893	0	40.25	1		E
6071	ZULLAE	306	8	278.921	0	40.75	1		E
6076	ZULLAW	306	8	281.297	0	41.01	1		E
6071	ZULLAE	307	8	285.466	0	41.62	1		E
6076	ZULLAW	307	8	287.842	0	41.89	1		E
6071	ZULLAE	308	8	293.558	0	42.72	1		E
6076	ZULLAW	308	8	295.935	0	43.04	1		E
6071	ZULLAE	309	8	280.843	0	41.98	1		Q
6076	ZULLAW	309	8	283.220	0	42.24	1		Q
6071	ZULLAE	310	8	288.659	0	42.10	1		Q
6076	ZULLAW	310	8	291.065	0	42.25	1		Q
6071	ZULLAE	311	8	295.148	0	43.19	1		Q
6076	ZULLAW	311	8	297.522	0	43.47	1		Q
6071	ZULLAE	312	8	303.008	0	43.95	1		Q
6076	ZULLAW	312	8	305.384	0	44.17	1		Q
6071	ZULLAE	313	8	309.587					NO MONITOR RECORD
6076	ZULLAW	313	8	311.964					NO MONITOR RECORD
6071	ZULLAE	314	8	317.076	0	47.43	1		Q
6076	ZULLAW	314	8	319.452	0	47.70	1		Q
6071	ZULLAE	315	8	323.465	0	48.08	1		Q
6076	ZULLAW	315	8	325.842	0	48.33	1		Q
6071	ZULLAE	316	8	330.701	0	49.10	1		Q
6076	ZULLAW	316	8	333.078	0	49.35	1		Q
6071	ZULLAE	320	8	343.326					NOT RECORDED
6076	ZULLAW	320	8	345.703					NOT RECORDED
6071	ZULLAE	322	8	471.255		68.36	1		Q
6076	ZULLAW	322	8	473.635		68.57	1		Q

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6071	ZULLAE	323	8	492.243		69.53	1		Q
6075	ZULLAW	323	8	494.623		69.78	1		Q
6071	ZULLAE	324	8	512.948					NO MONITOR RECORD
6076	ZULLAW	324	8	515.329					NO MONITOR RECORD
6072	ZULLAE	326	8	555.627	0	77.32	1		E
6076	ZULLAW	326	8	557.534	0	77.51	1		E
6071	ZULLAE	327	8	523.199	0	74.24	1		L
6076	ZULLAW	327	8	525.580	0	74.51	1		L
6071	ZULLAE	328	8	512.521	0	72.15	1		E
6076	ZULLAW	328	8	514.901	0	72.43	1		E
6071	ZULLAE	329	8	457.627					NO MONITOR RECORD
6076	ZULLAW	329	8	460.007					NO MONITOR RECORD
6071	ZULLAE	330	8	446.708					NO MONITOR RECORD
6076	ZULLAW	330	8	449.089					NO MONITOR RECORD
6071	ZULLAE	331	8	439.334					TOO NOISY
6076	ZULLAW	331	8	441.712					TOO NOISY
6071	ZULLAE	332	8	438.600					TOO NOISY
6076	ZULLAW	332	8	440.979					TOO NOISY
6071	ZULLAE	333	8	415.657	0	62.68	1		Q
6076	ZULLAW	333	8	418.034	0	62.90	1		Q
6071	ZULLAE	334	8	393.125	0	58.71	1		Q
6076	ZULLAW	334	8	395.502	0	59.00	1		Q
6071	ZULLAE	335	8	371.694	0	53.80	1		Q
6076	ZULLAW	335	8	374.071	0	54.05	1		Q
6071	ZULLAE	336	8	361.012					NO SHOT TIME
6076	ZULLAW	336	8	363.389					NO SHOT TIME
6071	ZULLAE	337	8	349.403	0	52.31	1		Q
6076	ZULLAW	337	8	351.779	0	52.57	1		Q
6081	UPPERE	303	8	269.219	0	39.35	1		E
6086	UPPERW	303	8	271.389	0	39.64	1		E
6081	UPPERE	304	8	277.399	0	40.90	1		E
6086	UPPERW	304	8	279.569	0	41.13	1		E
6081	UPPERE	305	8	283.650	0	41.41	1		E
6086	UPPERW	305	8	285.820	0	41.69	1		E
6081	UPPERE	306	8	291.052	0	42.14	1		E
6086	UPPERW	306	8	293.221	0	42.39	1		E
6081	UPPERE	307	8	297.597	0	43.14	1		E
6086	UPPERW	307	8	299.766	0	43.40	1		E
6081	UPPERE	308	8	305.687	0	43.94	1		E
6086	UPPERW	308	8	307.855	0	44.16	1		E
6081	UPPERE	309	8	292.973	0	42.95	1		L
6086	UPPERW	309	8	295.141	0	43.17	1		L
6081	UPPERE	310	8	300.820	0	43.57	1		L
6086	UPPERW	310	8	302.989	0	43.83	1		L
6081	UPPERE	311	8	307.282	0	44.40	1		E
6086	UPPERW	311	8	309.453	0	44.61	1		E
6081	UPPERE	312	8	315.138	0	46.62	1		Q
6086	UPPERW	312	8	317.307	0	46.87	1		Q
6081	UPPERE	313	8	321.716	0	48.25	1		Q
6081	UPPERW	313	8	323.883	0	48.49	1		Q

NORTHERN PROFILES: LAND STATIONS

STATION NO	STATION NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6081	UPPERE	314	8	329.207					NOT RECORDED
6086	UPPERW	314	8	331.376					NOT RECORDED
6081	UPPERE	315	8	335.595	0	49.45	1		Q
6086	UPPERW	315	8	337.763	0	49.72	1		Q
6081	UPPERE	316	8	342.831	0	48.30	1		E
6086	UPPERW	316	8	344.998	0	48.57	1		E
6081	UPPERE	320	8	355.457					NOT RECORDED
6086	UPPERW	320	8	357.625					NOT RECORDED
6081	UPPERE	322	8	483.381	0	69.58	1		L
6086	UPPERW	322	8	485.544	0	69.85	1		L
6081	UPPERE	323	8	504.368	0	71.85	1		L
6086	UPPERW	323	8	506.531	0	72.12	1		L
6086	UPPERW	324	8	527.229	0	74.75	1		E
6081	UPPERE	326	8	567.262	0	79.17	1		E
6086	UPPERW	326	8	569.417	0	79.45	1		E
6081	UPPERE	327	8	535.318	0	75.39	1		E
6086	UPPERW	327	8	537.477	0	75.65	1		E
6081	UPPERE	328	8	524.641	0	74.02	1		L
6086	UPPERW	328	8	526.802	0	74.31	1		L
6081	UPPERE	329	8	525.069	0	75.36	1		E
6081	UPPERE	329	8	469.753	0	67.56	1		E
6086	UPPERW	329	8	471.917	0	67.81	1		E
6081	UPPERE	330	8	450.831					NO MONITOR RECORD
6086	UPPERW	330	8	460.993					NO MONITOR RECORD
6081	UPPERE	331	8	451.461	0	66.11	1		E
6086	UPPERW	331	8	453.626	0	66.34	1		E
6081	UPPERE	332	8	450.728	0	65.67	1		E
6086	UPPERW	332	8	452.894	0	65.96	1		E
6081	UPPERE	333	8	427.786	0	63.74	1		Q
6086	UPPERW	333	8	429.952	0	63.99	1		Q
6081	UPPERE	334	8	405.255	0	59.84	1		Q
6086	UPPERW	334	8	407.421	0	60.09	1		Q
6081	UPPERE	335	8	383.824	0	54.95	1		L
6086	UPPERW	335	8	385.991	0	55.10	1		L
6081	UPPERE	336	8	373.140					NO SHOT TIME
6086	UPPERW	336	8	375.307					NO SHOT TIME
6081	UPPERE	337	8	361.534	0	52.33	1		L
6086	UPPERW	337	8	363.702	0	52.54	1		L
6091	FAWCEE	303	8	308.070	0	44.52	1		E
6096	FAWCEW	303	8	309.570	0	44.71	1		E
6091	FAWCEE	304	8	316.251	0	45.98	1		E
6096	FAWCEW	304	8	317.750	0	46.14	1		E
6091	FAWCEE	305	8	322.502	0	46.70	1		E
6096	FAWCEW	305	8	324.001	0	46.84	1		E
6091	FAWCEE	306	8	329.904	0	47.35	1		E
6096	FAWCEW	306	8	331.401	0	47.51	1		E
6091	FAWCEE	307	8	336.449	0	48.55	1		E
6096	FAWCEW	307	8	337.946	0	48.72	1		E
6091	FAWCEE	308	8	344.539	0	49.25	1		E
6096	FAWCEW	308	8	346.033	0	49.47	1		E

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6091	FAWCEE	309	8	331.825	0	47.80	1		E
6096	FAWCEW	309	8	333.321	0	48.05	1		E
6091	FAWCEE	310	8	339.672	0	48.98	1		E
6096	FAWCEW	310	8	341.169	0	49.24	1		E
6091	FAWCEE	311	8	346.135	0	49.50	1		E
6096	FAWCEW	311	8	347.636	0	49.75	1		E
6091	FAWCEE	312	8	353.991	0	51.41	1		L
6096	FAWCEW	312	8	355.487	0	51.56	1		L
6091	FAWCEE	313	8	360.568	0	53.30	1		Q
6096	FAWCEW	313	8	362.062	0	53.46	1		Q
6091	FAWCEE	314	8	368.060	0	53.93	1		Q
6096	FAWCEW	314	8	369.557	0	54.14	1		Q
6091	FAWCEE	315	8	374.448	0	53.47	1		L
6096	FAWCEW	315	8	375.943	0	53.65	1		L
6091	FAWCEE	316	8	381.684	0	53.58	1		E
6096	FAWCEW	316	8	383.178	0	53.90	1		E
6091	FAWCEE	320	8	394.311					NOT RECORDED
6096	FAWCEW	320	8	395.806					NOT RECORDED
6091	FAWCEE	322	8	522.187		74.15	1		E
6096	FAWCEW	322	8	523.671		74.45	1		E
6091	FAWCEE	323	8	543.167	0	76.67	1		E
6096	FAWCEW	323	8	544.650	0	76.86	1		E
6091	FAWCEE	324	8	563.912	0	79.92	1		E
6096	FAWCEW	324	8	565.392	0	80.22	1		E
6091	FAWCEE	326	8	606.098	0	83.76	1		E
6096	FAWCEW	326	8	607.567	0	84.03	1		E
6092	FAWCEE	327	8	574.536	0	80.40	1		E
6096	FAWCEW	327	8	575.639	0	80.66	1		E
6092	FAWCEE	328	8	563.860	0	79.20	1		E
6096	FAWCEW	328	8	564.965	0	79.31	1		E
6091	FAWCEE	329	8	508.664	0	72.40	1		E
6096	FAWCEW	329	8	510.048	0	72.56	1		E
6091	FAWCEE	330	8	497.786	0	71.38	1		E
6096	FAWCEW	330	8	499.168	0	71.63	1		E
6091	FAWCEE	331	8	490.419	0	70.91	1		L
6096	FAWCEW	331	8	491.805	0	71.14	1		L
6091	FAWCEE	332	8	589.687	0	70.80	1		L
6096	FAWCEW	332	8	591.074	0	70.98	1		L
6091	FAWCEE	333	8	466.744	0	69.50	1		Q
6096	FAWCEW	333	8	468.134	0	69.70	1		Q
6091	FAWCEE	334	8	444.212	0	65.86	1		Q
6096	FAWCEW	334	8	445.603	0	66.15	1		Q
6091	FAWCEE	335	8	422.781	0	59.92	1		E
6096	FAWCEW	335	8	424.171	0	60.06	1		E
6091	FAWCEE	336	8	412.096					NO SHOT TIME
6096	FAWCEW	336	8	413.086					NO SHOT TIM
6091	FAWCEE	337	8	400.491	0	57.27	1		E
6096	FAWCEW	337	8	401.884	0	57.52	1		E
6091	FAWCEE	338	8	375.617	0	52.49	1		E
6096	FAWCEW	338	8	377.094	0	52.74	1		E

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6091	FAWCEE	340	8	385.513	0	54.02	1		E
6096	FAWCEW	340	8	387.074	0	54.24	1		E
6091	FAWCEE	341	8	391.636					NO SHOT TIME
6096	FAWCEW	341	8	393.231					NO SHOT TIME
6091	FAWCEE	342	8	399.101	0	56.03	1		E
6096	FAWCEW	342	8	400.726	0	56.27	1		E
6091	FAWCEE	343	8	398.819	0	55.80	1		E
6096	FAWCEW	343	8	400.446	0	56.05	1		E
6091	FAWCEE	344	8	377.329	0	53.44	1		L
6096	FAWCEW	344	8	378.503	0	53.69	1		L
6091	FAWCEE	345	8	378.388	0	53.34	1		L
6096	FAWCEW	345	8	379.484	0	53.60	1		L
6091	FAWCEE	346	8	382.372	0	53.82	1		Q
6096	FAWCEW	346	8	383.403	0	54.00	1		Q
6091	FAWCEE	347	8	386.328	0	54.48	1		Q
6096	FAWCEW	347	8	387.289	0	54.72	1		Q
6091	FAWCEE	348	8	393.010	0	54.61	1		E
6096	FAWCEW	348	8	393.892	0	54.76	1		E
6091	FAWCEE	349	8	399.657	0	56.36	1		L
6096	FAWCEW	349	8	400.485	0	56.57	1		L
6091	FAWCEE	350	8	375.361	0	53.90	1		Q
6096	FAWCEW	350	8	376.546	0	54.15	1		Q
6091	FAWCEE	353	8	373.932	0	54.00	1		Q
6096	FAWCEW	353	8	375.176	0	54.23	1		Q
6091	FAWCEE	354	8	373.037	0	54.18	1		Q
6096	FAWCEW	354	8	374.301	0	54.43	1		Q
6091	FAWCEE	355	8	375.524	0	52.81	1		E
6096	FAWCEW	355	8	376.911	0	53.11	1		E
6101	DELRAE	303	8	334.123	0	47.93	1		E
6106	DELRAW	303	8	336.300	0	48.18	1		E
6101	DELRAE	304	8	342.303	0	48.77	1		E
6106	DELRAW	304	8	344.480	0	49.10	1		E
6101	DELRAE	305	8	348.556	0	50.29	1		I
6106	DELRAW	305	8	350.733	0	50.59	1		I
6101	DELRAE	306	8	355.962					NO MONITOR RECORD
6106	DELRAW	306	8	356.139					NO MONITOR RECORD
6101	DELRAE	307	8	362.507	0	52.00	1		E
6106	DELRAW	307	8	364.684	0	52.25	1		E
6101	DELRAE	308	8	370.604	0	52.69	1		E
6106	DELRAW	308	8	372.781	0	53.04	1		E
6101	DELRAE	309	8	357.887	0	51.36	1		E
6106	DELRAW	309	8	360.064	0	51.67	1		E
6101	DELRAE	310	8	365.730	0	52.51	1		E
6106	DELRAW	310	8	367.907	0	52.90	1		E
6101	DELRAE	311	8	372.181	0	53.02	1		E
6106	DELRAW	311	8	374.359	0	53.33	1		E
6101	DELRAE	312	8	380.052	0	54.37	1		E
6106	DELRAW	312	8	382.229	0	54.60	1		E
6101	DELRAE	313	8	386.634	0	56.16	1		Q
6106	DELRAW	313	8	388.811	0	56.50	1		Q

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6101	DELRAE	314	8	394.118	0	56.86	1		L
6106	DELRAW	314	8	396.295	0	57.11	1		L
6101	DELRAE	315	8	400.512	0	56.23	1		E
6106	DELRAW	315	8	402.689	0	56.54	1		E
6101	DELRAE	316	8	407.749	0	56.86	1		E
6106	DELRAW	316	8	409.926	0	57.16	?		E
6101	DELRAE	320	8	420.373					NOT RECORDED
6106	DELRAW	320	8	422.550					NOT RECORDED
6101	DELRAE	322	8	548.267					NO MONITOR RECORD
6106	DELRAW	322	8	550.443					NO MONITOR RECORD
6101	DELRAE	323	8	569.249					NO MONITOR RECORD
6106	DELRAW	323	8	571.426					NO MONITOR RECORD
6101	DELRAE	324	8	589.999	0	83.[illegible]	1		E
6106	DELRAW	324	8	592.175	0	83.47	1		E
6101	DELRAE	326	8	632.210	0	87.26	1		E
6106	DELRAW	326	8	634.386	0	87.61	1		E
6101	DELRAE	327	8	600.251	0	83.64	1		E
6106	DELRAW	327	8	602.428	0	83.99	1		E
6101	DELRAE	328	8	589.571					NO MONITOR RECORD
6106	DELRAW	328	8	591.748					NO MONITOR RECORD
6101	DELRAE	329	8	534.640					NO MONITOR RECORD
6106	DELRAW	329	8	536.817					NO MONITOR RECORD
6101	DELRAE	330	8	523.729	0	74.43	1		E
6106	DELRAW	330	8	525.905	0	74.77	1		E
6101	DELRAE	331	8	516.349	0	74.10	1		L
6106	DELRAW	331	8	518.525	0	74.38	1		L
6101	DELRAE	332	8	515.613	0	73.86	1		L
6106	DELRAW	332	8	517.790	0	74.14	1		L
6101	DELRAE	333	8	492.713	0	71.57	1		Q
6106	DELRAW	333	8	494.890	0	71.85	1		Q
6101	DELRAE	334	8	470.178					TOO NOISY
6106	DELRAW	334	8	472.355					TOO NOISY
6101	DELRAE	335	8	448.745	0	63.15	1		E
6106	DELRAW	335	8	450.922	0	63.45	1		E
6101	DELRAE	336	8	438.064					NO SHOT TIME
6106	DELRAW	336	8	440.242					NO SHOT TIME
6101	DELRAE	337	8	426.448					NO MONITOR RECORD
6106	DELRAW	337	8	428.625					NO MONITOR RECORD
6111	ROMNEE	303	8	358.050	0	51.00	1		L
6116	ROMNEW	303	8	359.655	0	51.20	1		L
6111	ROMNEE	304	8	366.228	0	52.50	1		L
6116	ROMNEW	304	8	367.834	0	52.70	1		L
6111	ROMNEE	305	8	372.482	0	52.99	1		E
6116	ROMNEW	305	8	374.088	0	53.19	1		E
6111	ROMNEE	306	8	379.892					NOT RECORDED
6116	ROMNEW	306	8	381.496					NOT RECORDED
6111	ROMNEE	307	8	386.437	0	54.84	1		E
6116	ROMNEW	307	8	388.041	0	55.01	1		E
6111	ROMNEE	308	8	394.541	0	56.11	1		E
6116	ROMNEW	308	8	396.142	0	56.27	1		E

NORTHERN PROFILES: LARGO STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6111	ROMNEE	309	8	381.822	0	54.54	1		E
6116	ROMNEW	309	8	383.424	0	54.75	1		E
6111	ROMNEE	310	8	389.660	0	55.49	1		E
6116	ROMNEW	310	8	391.264	0	55.65	1		E
6111	ROMNEE	311	8	396.097	0	56.12	1		E
6116	ROMNEW	311	8	397.708	0	56.34	1		E
6111	ROMNEE	312	8	403.983					NOT RECORDED
6116	ROMNEW	312	8	405.587					NOT RECORDED
6111	ROMNEE	313	8	410.570	0	58.22	1		L
6116	ROMNEW	313	8	412.172	0	58.50	1		L
6111	ROMNEE	314	8	418.043					NOT RECORDED
6116	ROMNEW	314	8	419.650					NOT RECORDED
6111	ROMNEE	315	8	424.443	0	59.23	1		E
6116	ROMNEW	315	8	426.048	0	59.42	1		E
6111	ROMNEE	316	8	431.681					NOT RECORDED
6116	ROMNEW	316	8	433.285					NOT RECO
6111	ROMNEE	320	8	444.301					NO SHOT TIME
6116	ROMNEW	320	8	445.908					NO SHOT TIME
6111	ROMNEE	322	8	572.210	0	80.78	1		L
6116	ROMNEW	322	8	573.808	0	81.00	1		L
6111	ROMNEE	323	8	593.194	0	82.88	1		E
6116	ROMNEW	323	8	594.792	0	83.05	1		E
6111	ROMNEE	324	8	613.949	0	85.91	1		E
6116	ROMNEW	324	8	615.544	0	86.13	1		E
6111	ROMNEE	326	8	656.189	0	90.58	1		E
6116	ROMNEW	326	8	657.770	0	90.72	1		E
6111	ROMNEE	327	8	624.206	0	86.59	1		E
6116	ROMNEW	327	8	625.799	0	86.81	1		E
6111	ROMNEE	328	8	613.522	0	85.21	1		E
6116	ROMNEW	328	8	615.117	0	85.46	1		E
6111	ROMNEE	329	8	558.581	0	78.89	1		E
6116	ROMNEW	329	8	560.180	0	79.13	1		E
6111	ROMNEE	330	8	547.600	0	77.78	1		E
6116	ROMNEW	330	8	549.274	0	78.00	1		E
6111	ROMNEE	331	8	540.284	0	76.89	1		E
6116	ROMNEW	331	8	541.885	0	77.11	1		E
6111	ROMNEE	332	8	539.545	0	76.87	1		E
6116	ROMNEE	332	8	541.148	0	77.06	1		E
6111	ROMNEE	338	8	424.695	0	59.17	1		E
6116	ROMNEW	338	8	426.444	0	59.41	1		E
6111	ROMNEE	340	8	433.203	0	60.52	1		E
6116	ROMNEW	340	8	435.107	0	60.76	1		E
6111	ROMNEE	341	8	438.498					NO SHOT TIME
6116	ROMNEW	341	8	440.470					NO SHOT TIME
6111	ROMNEE	342	8	444.992	0	62.28	1		E
6116	ROMNEW	342	8	447.032	0	62.55	1		E
6111	ROMNEE	343	8	444.672	0	62.24	1		E
6116	ROMNEW	343	8	446.714	0	62.53	1		E
6111	ROMNEE	344	8	427.747	0	60.10	1		E
6116	ROMNEW	344	8	429.012	0	60.32	1		E

NORTHERN PROFILES: LAND STATIONS

STATION NO	NAME	SHOT	R	RANGE KM.	T	TIME SEC.	P	VEL. KM/SEC	COMMENT
6111	ROMNEE	345	8	428.633	0	60.11	1		E
6116	ROMNEW	345	8	429.784	0	60.28	1		E
6111	ROMNEE	346	8	432.362	0	60.41	1		E
6116	ROMNEW	346	8	433.418	0	60.53	1		E
6111	ROMNEE	347	8	435.93[illegible]	0	61.70	1		E
6116	ROMNEW	347	8	436.893	0	61.87	1		E
6111	ROMNEE	348	8	442.093	0	61.32	1		E
6116	ROMNEW	348	8	442.936	0	61.45	1		E
6111	ROMNEE	349	8	448.314	0	63.16	1		E
6116	ROMNEW	349	8	449.082	0	63.29	1		E
6111	ROMNEE	350	8	425.790	0	60.00	1		E
6116	ROMNEW	350	8	427.070	0	60.18	1		E
6111	ROMNEE	353	8	424.364					NO MONITOR RECORD
6116	ROMNEW	353	8	425.735					NO MONITO
6111	ROMNEE	354	8	423.444	0	60.33	1		Q
6116	ROMNEW	354	8	424.846	0	60.49	1		Q
6111	ROMNEE	355	8	425.455	0	59.40	1		E
6116	ROMNEW	355	8	427.051	0	59.62	1		E
6121	CEDARN	338	8	284.813	0	42.02	1		E
6125	CEDARS	338	8	286.472	0	42.24	1		E
6121	CEDARN	340	8	244.063	0	37.37	1		E
6126	CEDARS	340	8	245.156	0	37.61	1		E
6121	CEDARN	341	8	223.893					NO SHOT TIME
6126	CEDARS	341	8	225.996					NO SHOT TIME
6121	CEDARN	342	8	202.356	0	32.55	1		E
6126	CEDARS	342	8	204.470	0	32.80	1		E
6122	CEDARN	343	8	202.119	0	32.49	1		E
6126	CEDARS	343	8	203.807	0	32.70	1		E
6121	CEDARN	344	8	390.906	0	54.89	1		I
6126	CEDARS	344	8	392.978	0	55.17	1		I
6121	CEDARN	345	8	413.299	0	57.07	1		I
6126	CEDARS	345	8	415.360	0	57.42	1		I
6121	CEDARN	346	8	432.105	0	59.58	1		Q
6126	CEDARS	346	8	434.164	0	59.83	1		Q
6121	CEDARN	347	8	451.912					NOT RECORDED
6126	CEDARS	347	8	453.965					NOT RECORDED
6121	CEDARN	348	8	473.995					NOT RECORDED
6126	CEDARS	348	8	476.047					NOT RECORDED
6122	CEDARN	349	8	490.137	0	66.16	1		E
6126	CEDARS	349	8	491.780	0	66.37	1		E
6121	CEDARN	350	8	387.531	0	54.52	1		I
6126	CEDARS	350	8	389.598	0	54.77	1		I
6121	CEDARN	353	8	369.158	0	52.27	1		I
6126	CEDARS	353	8	371.228	0	52.54	1		I
6121	CEDARN	354	8	362.432	0	48.69	1		Q
6126	CEDARS	354	8	364.501	0	48.92	1		Q
6121	CEDARN	355	8	320.872	0	46.48	1		E
6126	CEDARK	355	8	322.957	0	46.76	1		E

TABLE V

EXPLANATION OF SYMBOLS

Column R: Method of Distance Calculation

9	From coordinates using Thomas' formula
8	From coordinates using formula other than Thomas'
7	From water wave travel time

Column T: Time Code

0	Travel time
1	Arrival time only; referenced to a WWV minute
2	Arrival time only; referenced to a WWV second

Column P: Type of Arrival

0	Unidentified event
1	First arrival
2-9	Later events

Velocity Column: Refers to apparent velocity across array stations

Comment Column:

I	Impulsive
E	Emergent
L	Late
Q	Questionable
WW	Water wave

Table VI. Layer Depths

Layer	Velocity, km/sec	Thickness, km
SN Profile		
1	1.70	0.49
2	6.03	30.38
3	8.13	---
NN Profile		
1	2.10	1.63
2	5.78	8.31
3	6.34	16.32
4	7.97	---

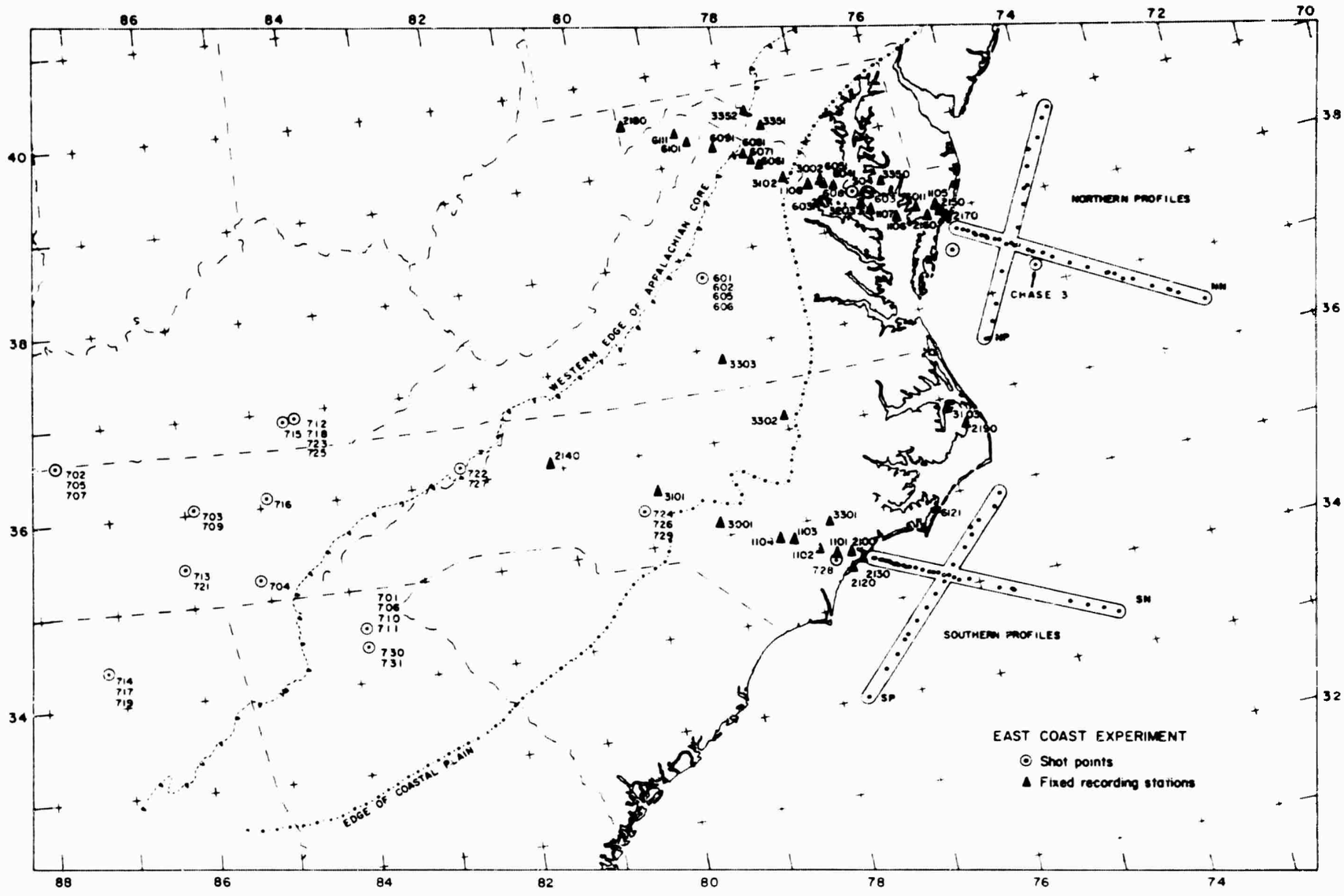

Figure 1. Location of shot points and recording stations. Temporary stations (those which moved frequently during the shooting program) are not shown.

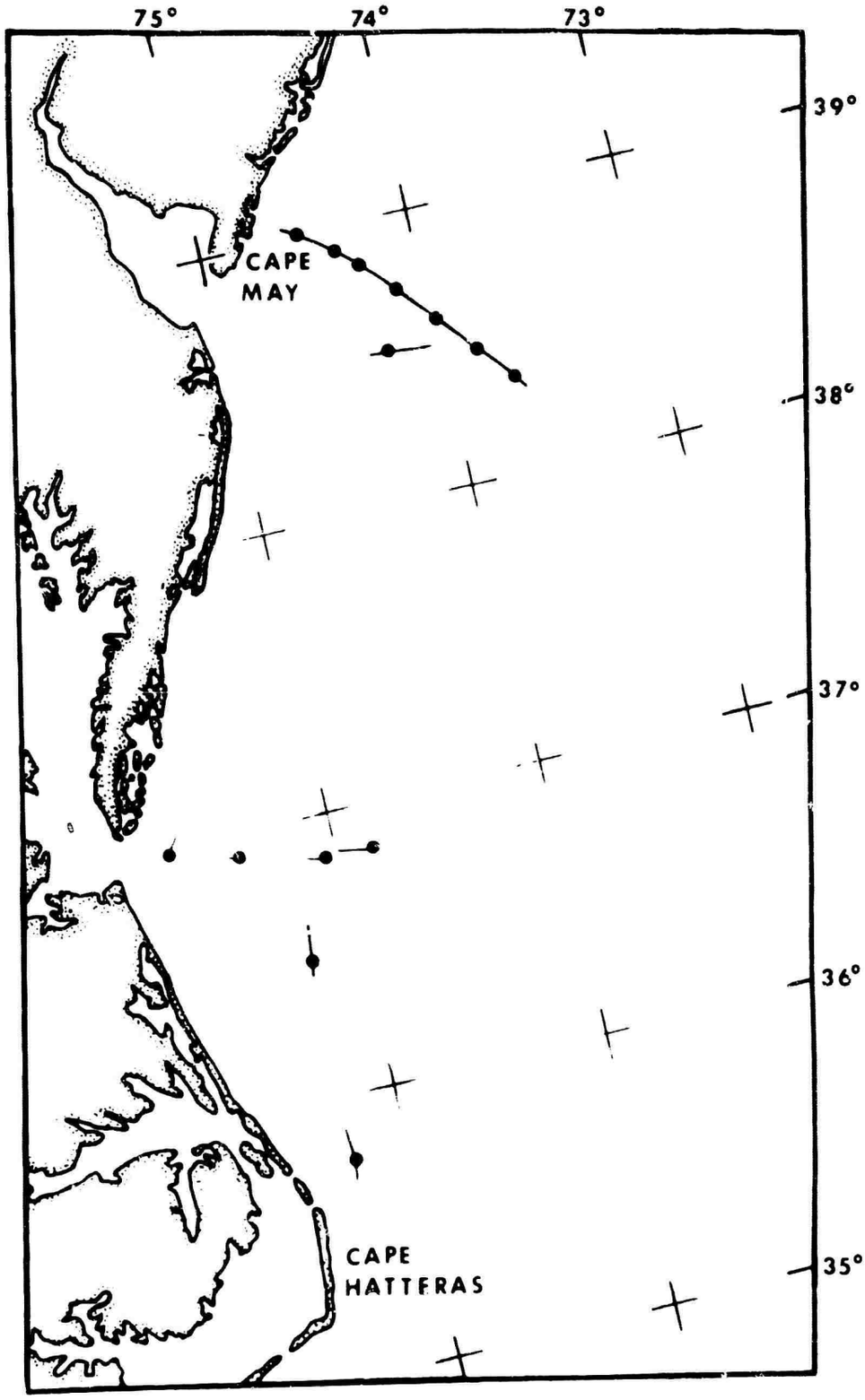

Figure 2. Location of previous seismic work in the vicinity of the ECOOE northern profiles, after Drake et al. (1959).

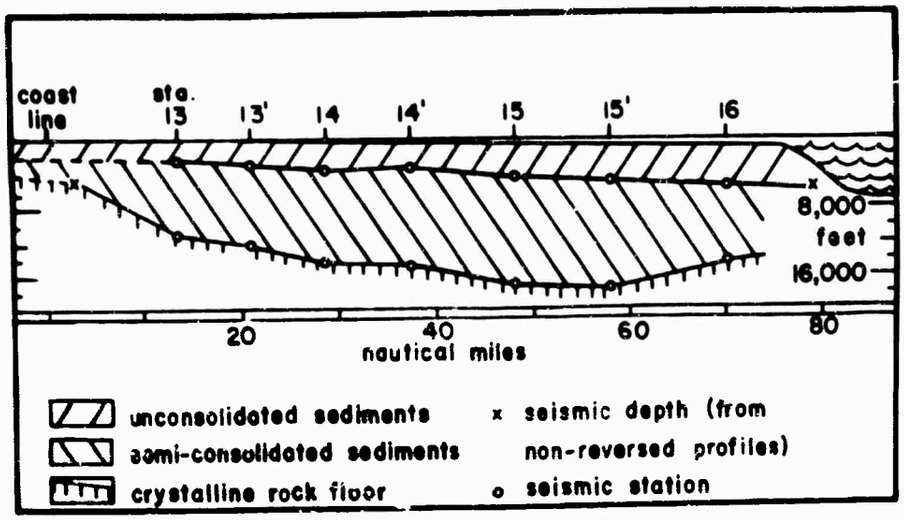

Figure 3. Structure section for the Cape May profile shown in Figure 2.

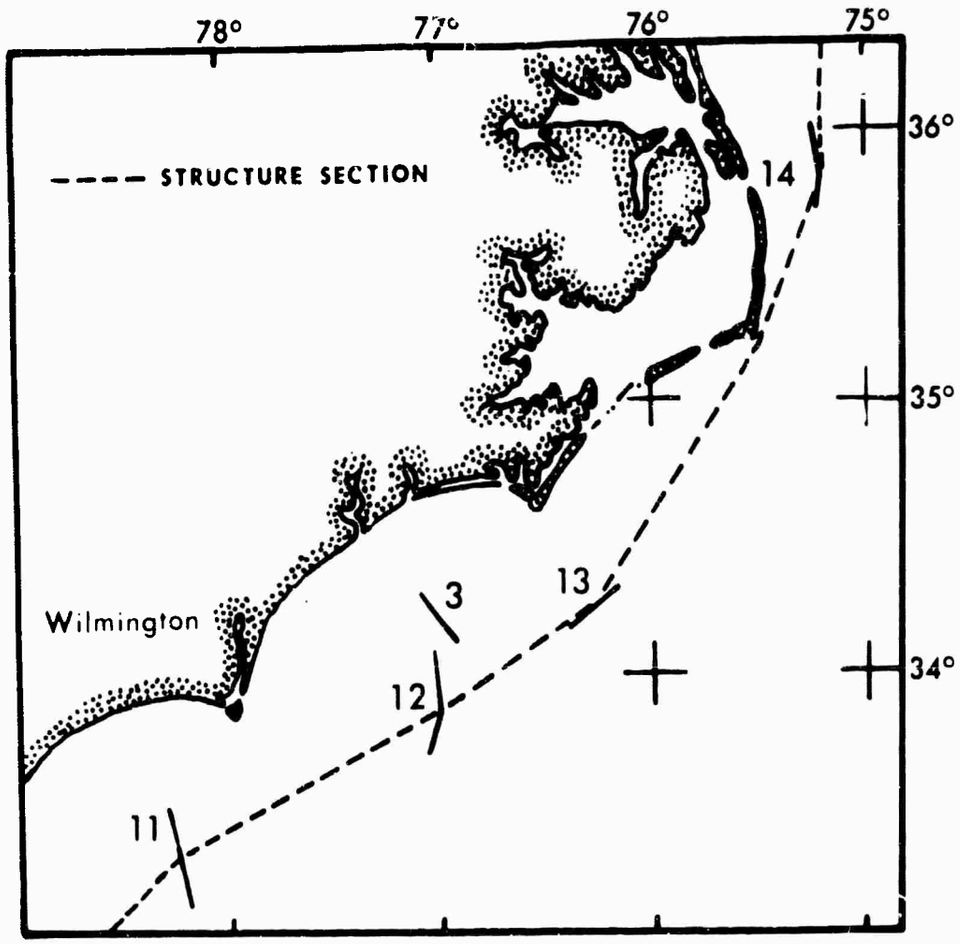

Figure 4. Profiles by Hersey et al. (1959) in the vicinity of the ECOOE southern profiles.

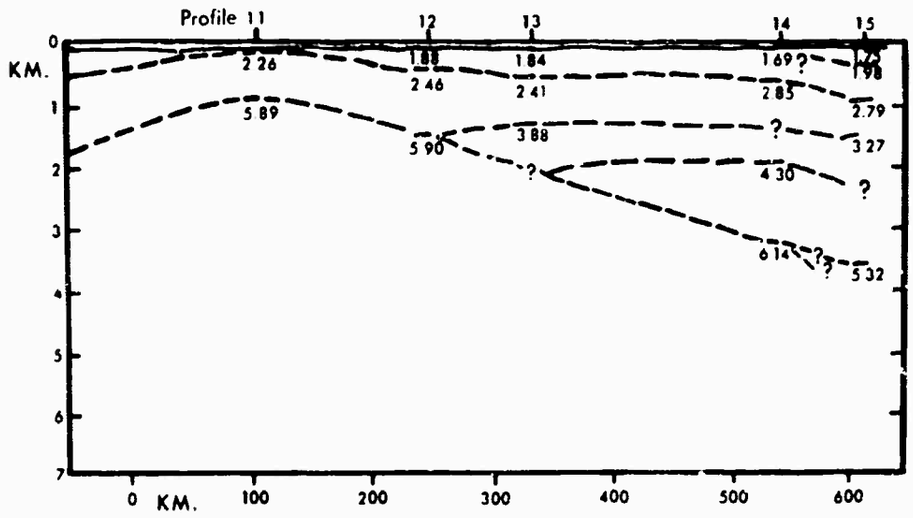

Figure 5. Structure section from profiles shown in Figure 4.

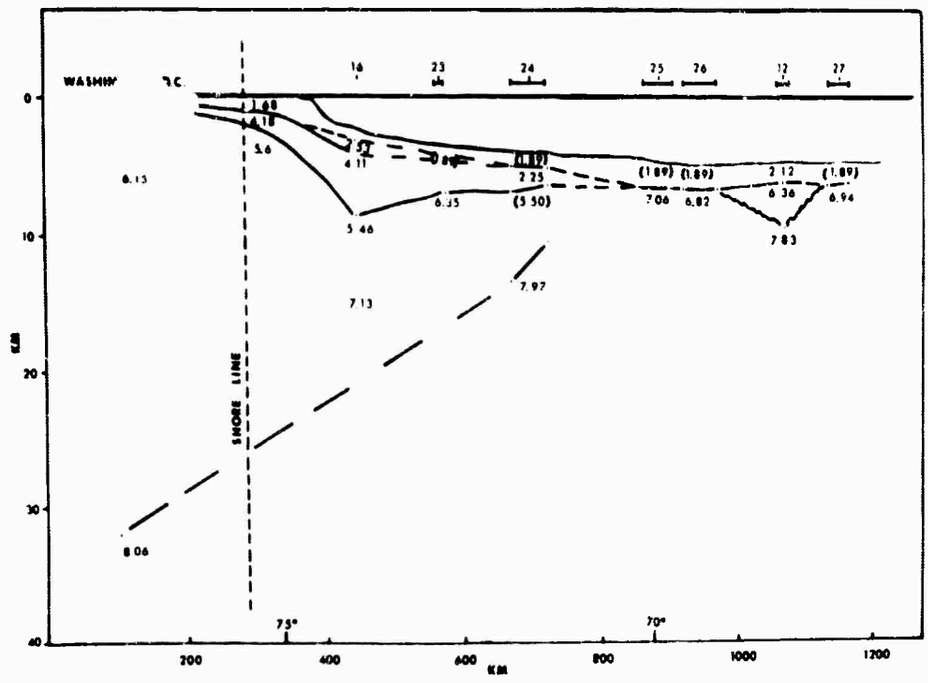

Figure 6. Structure section from Katz and Ewing (1956). Profile extends approximately along ECOOE NN profile.

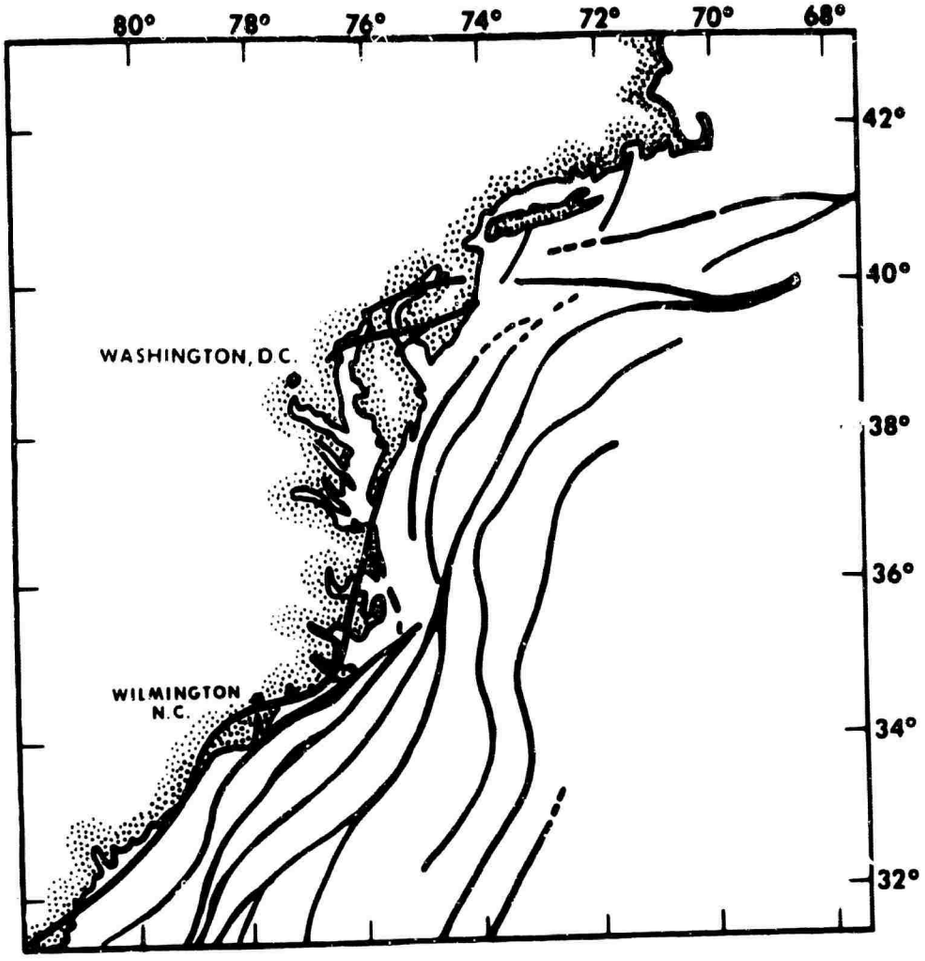

Figure 7. Magnetic anomalies in the ECOOE area, after Drake et al. (1963). Width of line indicates amplitude of anomaly.

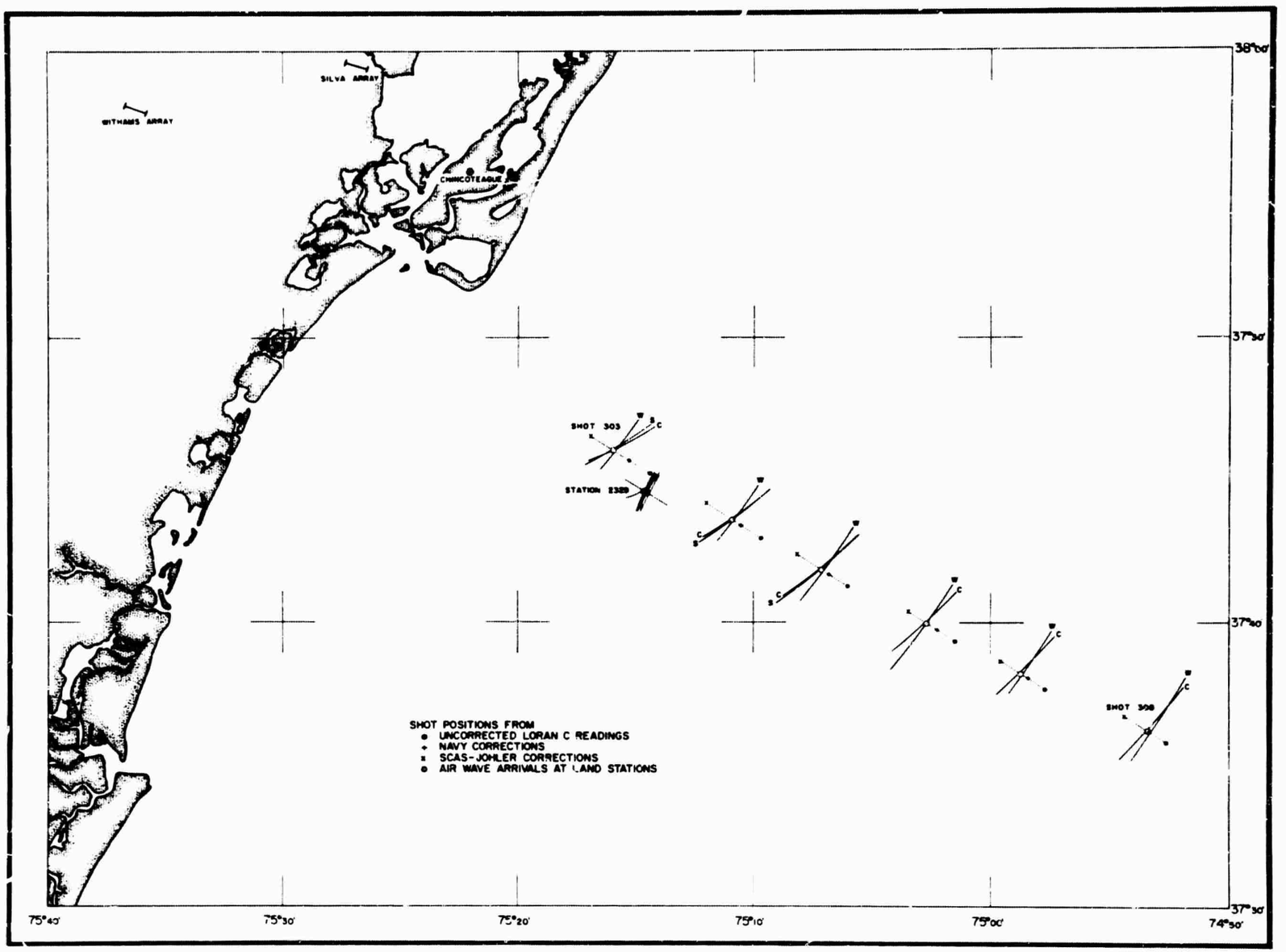

Figure 8. Location of shots 303 - 308 by means of air wave arrivals at land stations.

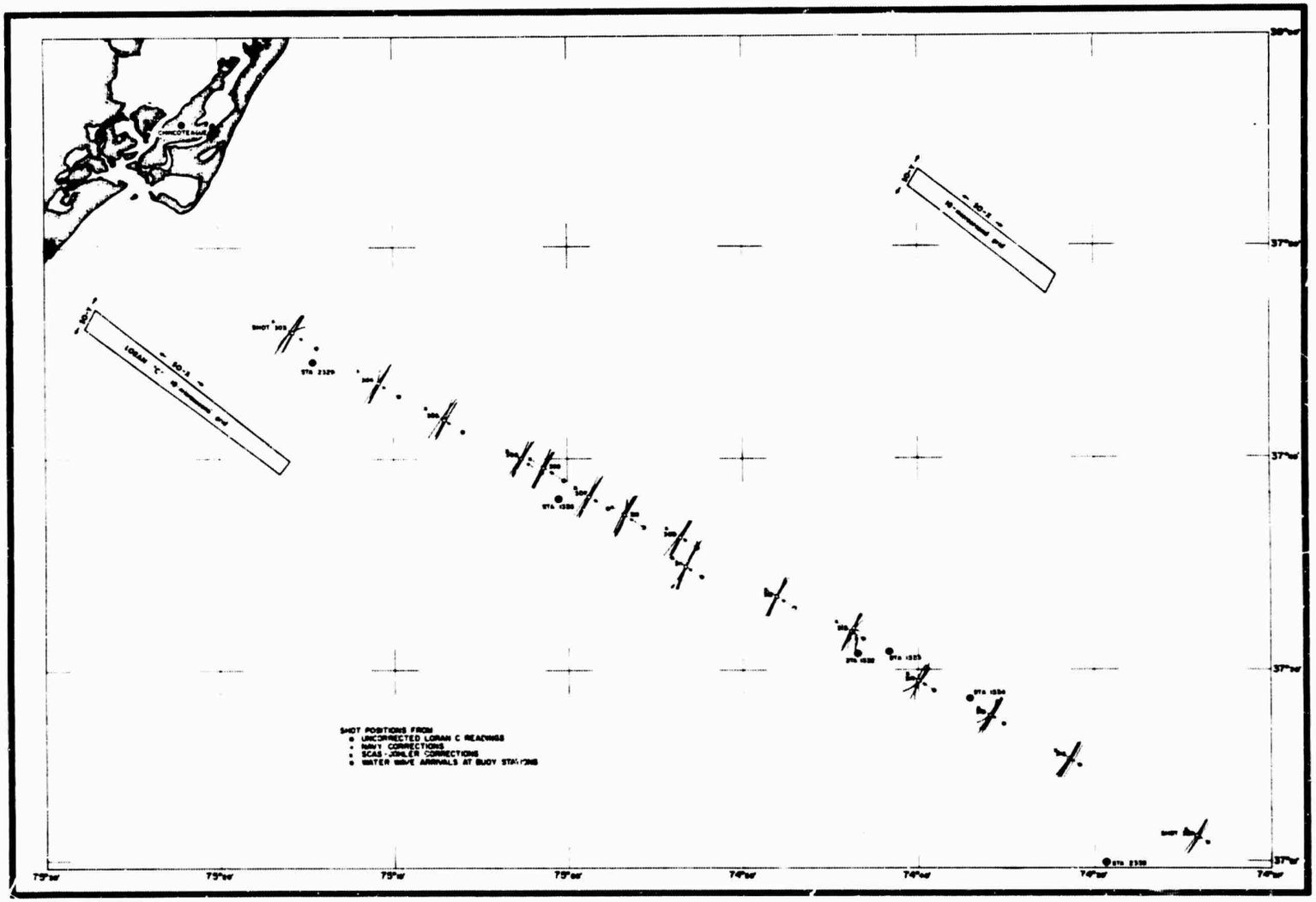

Figure 9. Location of shots 303 - 320 from water waves at buoy stations.

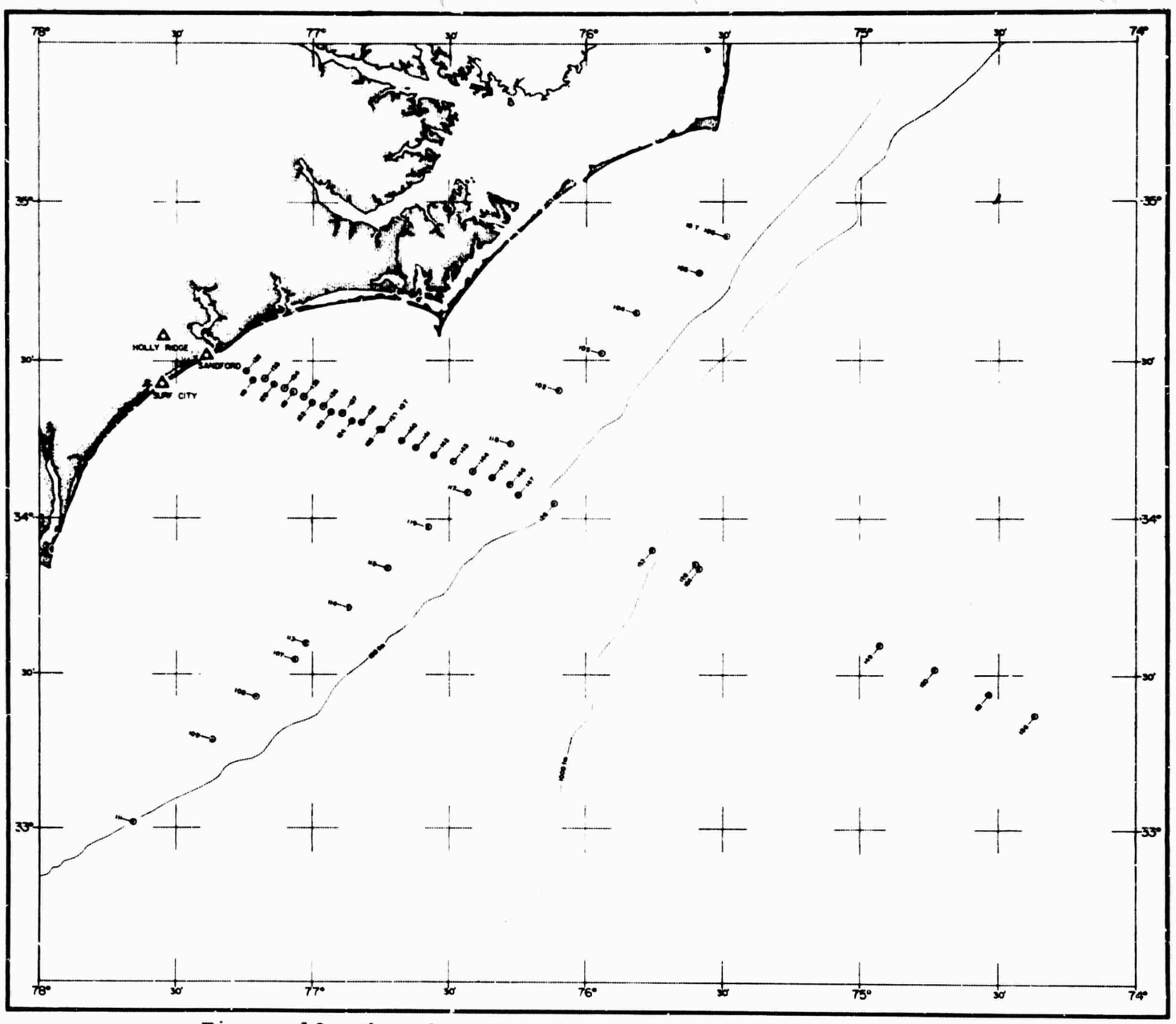

Figure 10. Shot locations, southern profiles.

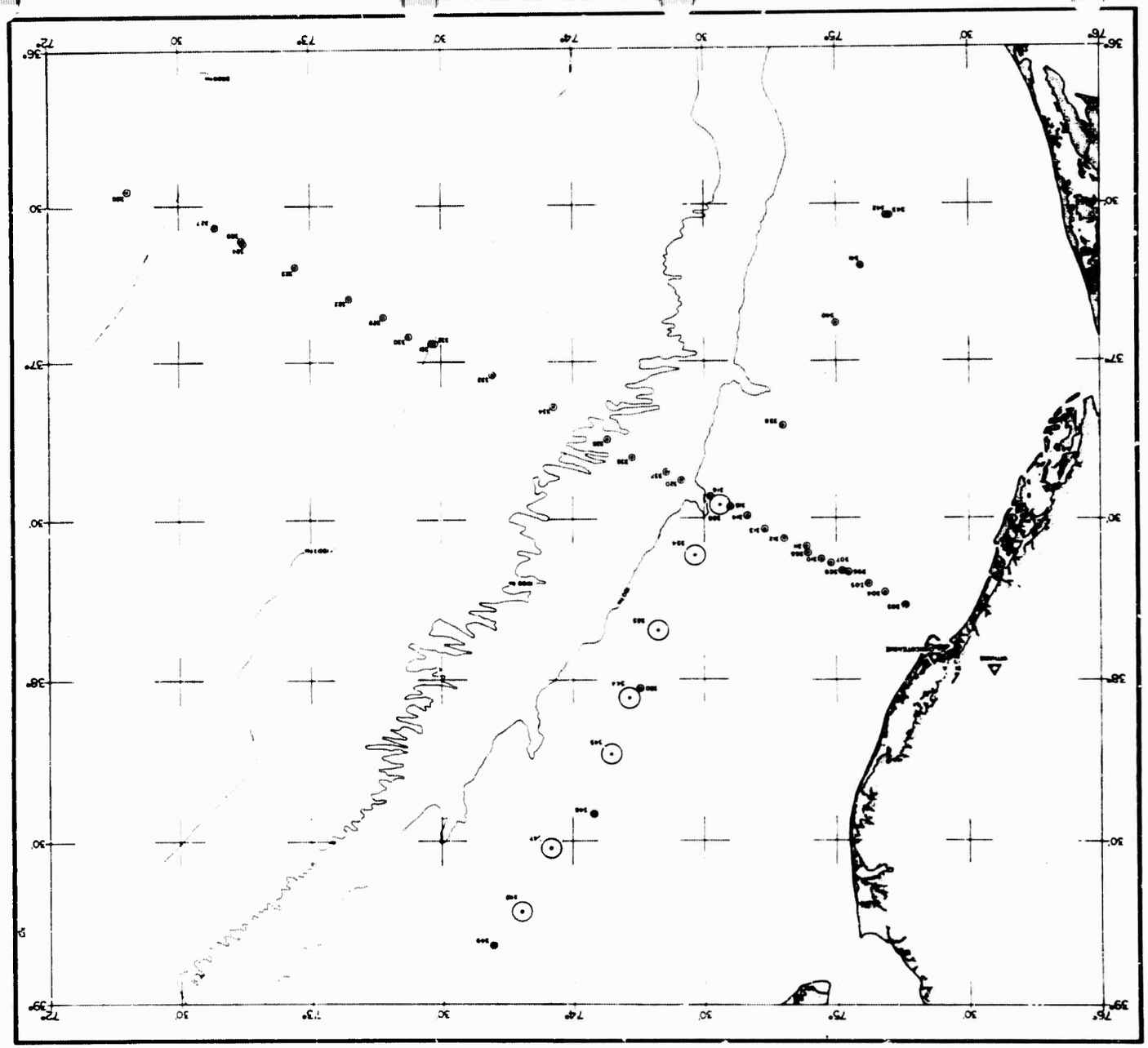

Figure 11. Shot locations, northern profiles.

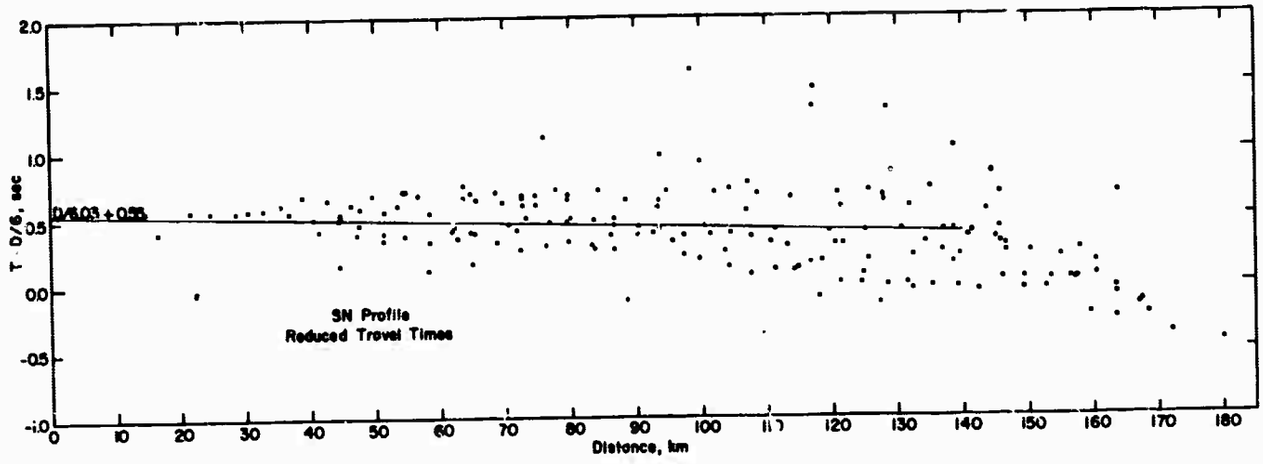

Figure 12. Reduced travel time plot of SN profile with reduction velocity of 6 km/sec.

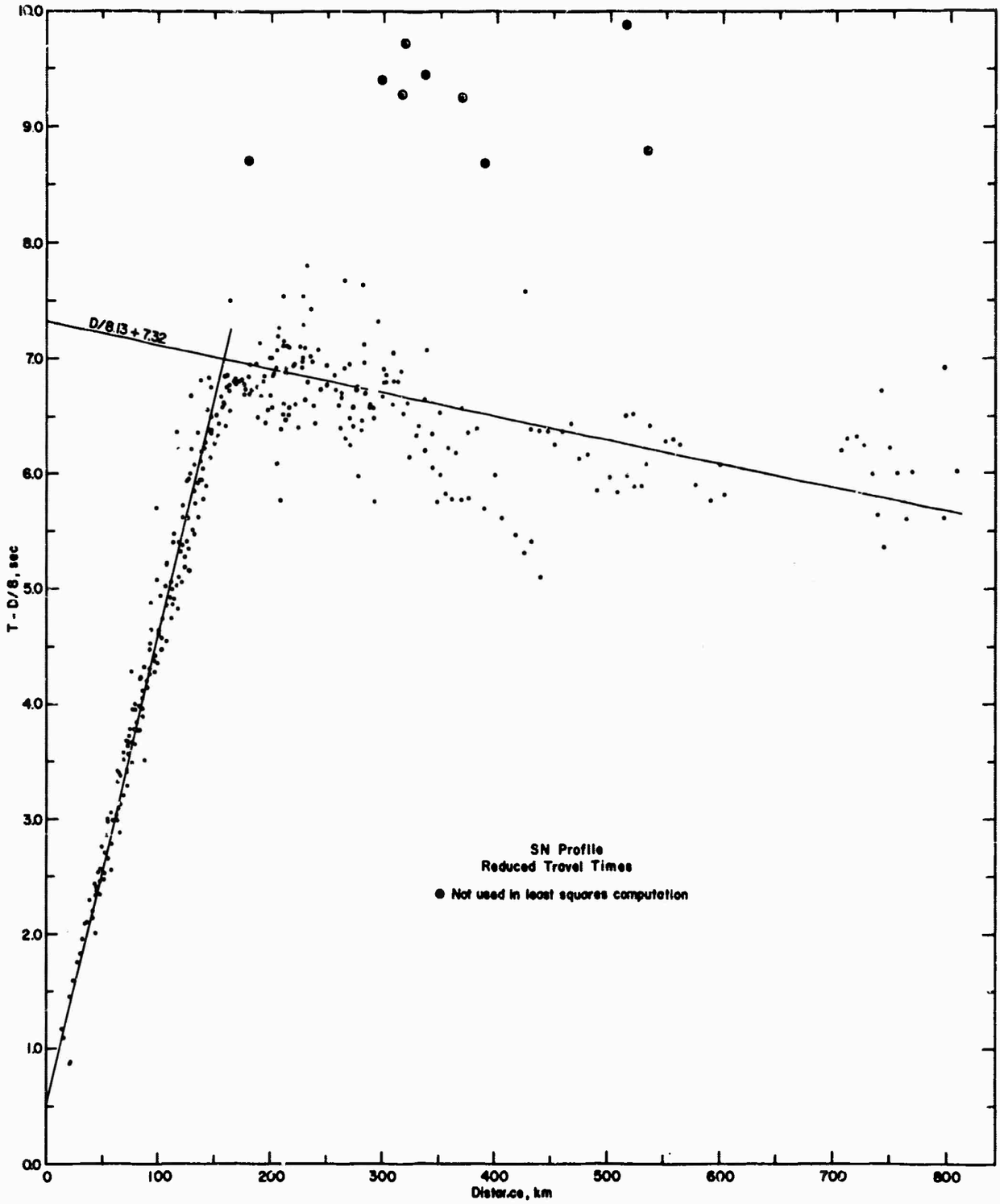

Figure 13. Reduced travel time plot of SN profile with reduction velocity of 8 km/sec.

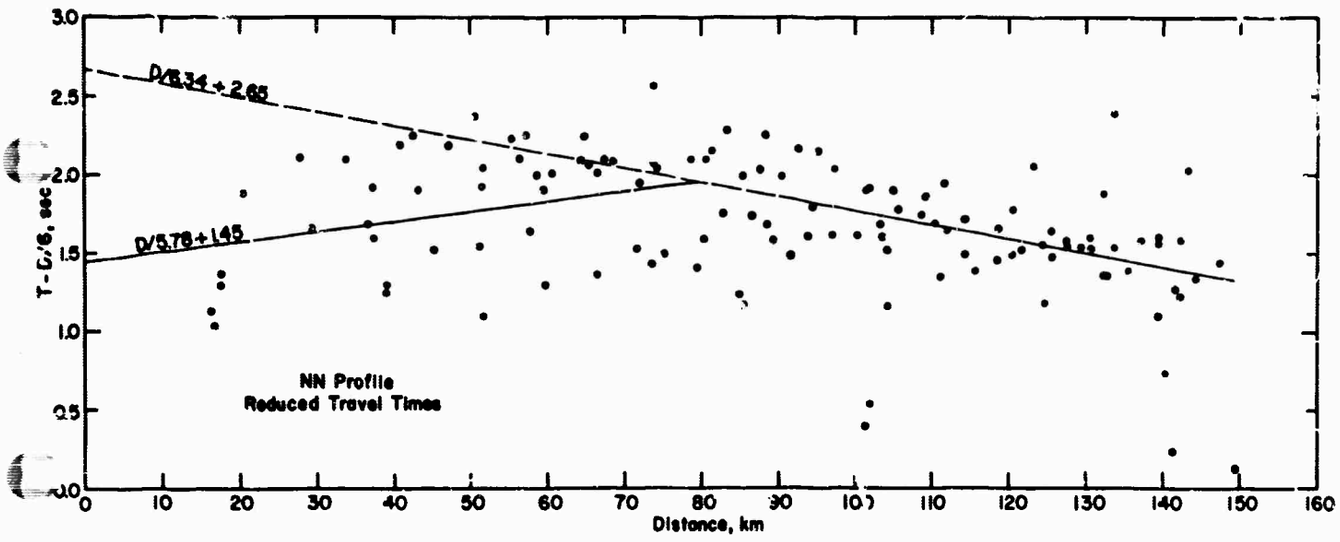

Figure 14. Reduced travel time plot of NN profile with reduction velocity of 6 km/sec.

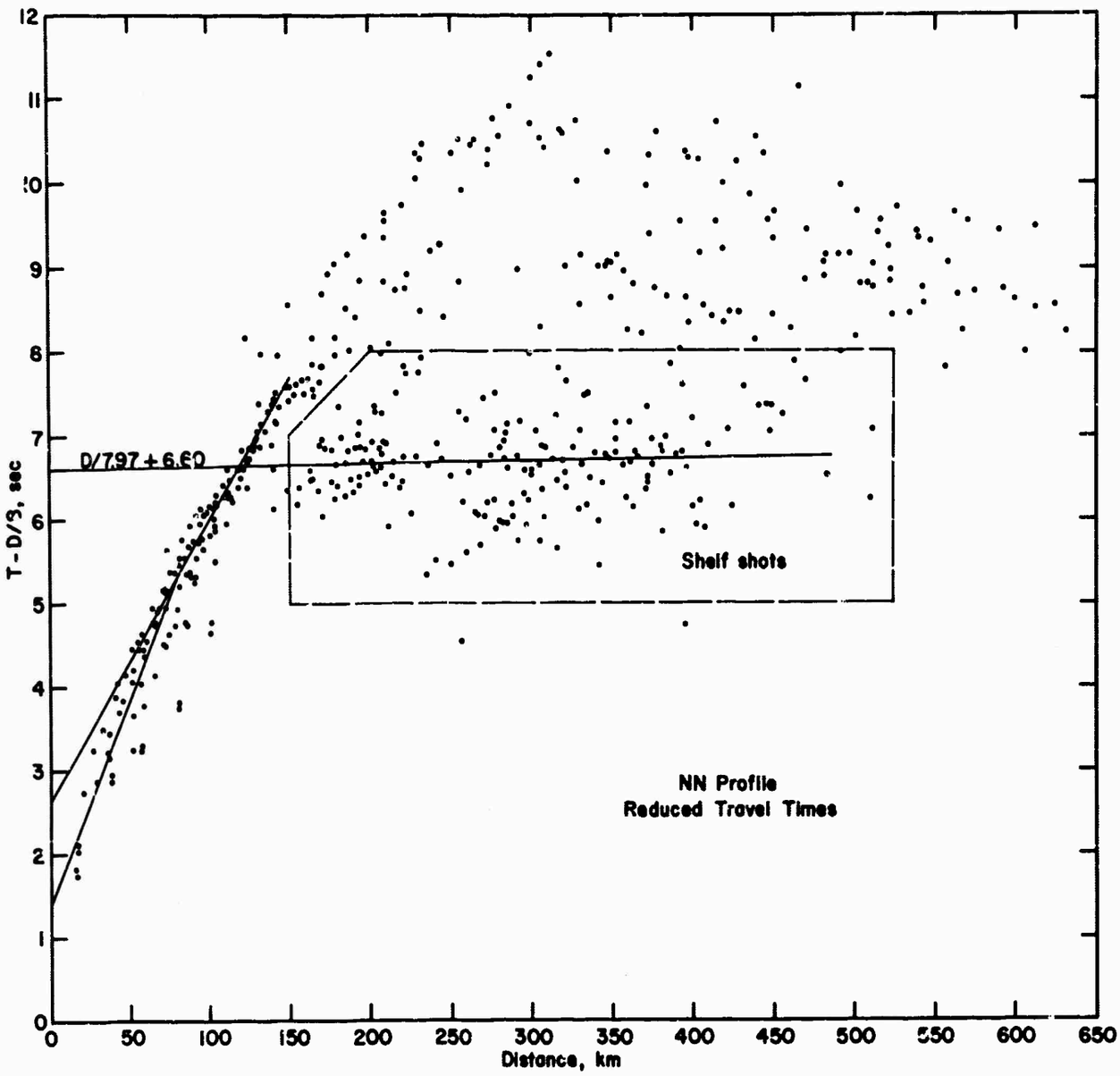

Figure 15. Reduced travel time plot of NN profile with reduction velocity of 8 km/sec.

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13. ABSTRACT

A cooperative seismic crustal structure experiment involving eleven participating institutions was conducted off the East Coast of the United States during the summer of 1965. Underwater shots varying in size from 20 pounds to 10 tons of explosive were detonated along four lines; two off the coast of North Carolina and two off the coast of Virginia. These shots were recorded at a number of land stations, both fixed and mobile, as well as at anchored buoy stations at sea. In each area one line was approximately normal to the continental margin and the other parallel to the margin near the outer edge of the continental shelf. Shot positions, shot instants and first arrival times at all participating recording stations are summarized in the tables of this paper.

Preliminary analyses of the data contributed by all of the participants for inclusion in this paper indicate a general crustal structure varying from 0.5 km of sediment overlying 30.4 km of basement for the southern profiles to 1.6 km of sediment above 8.3 km low velocity basement overlying about 16.3 km of high velocity basement in the northern area. The individual participants are expected to present more detailed summaries of their own portions of the data in subsequent papers.

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time term analysis						
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crustal structure						
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